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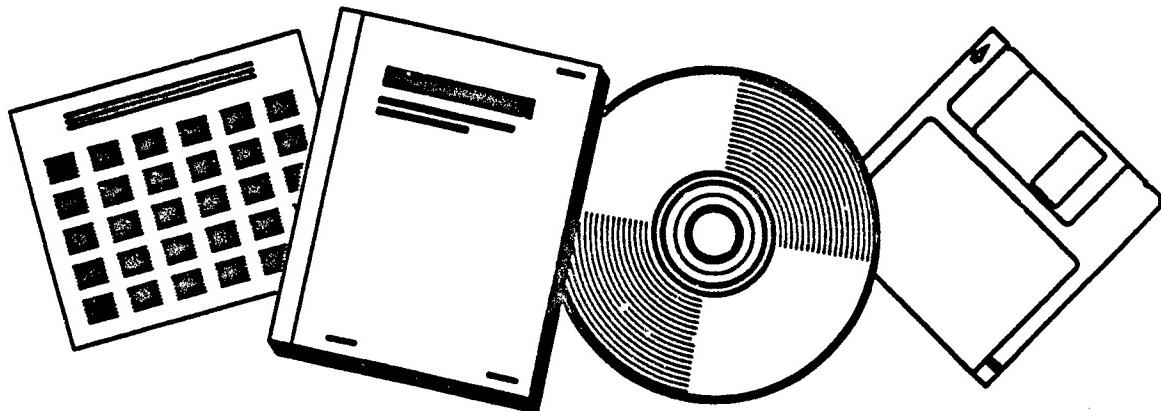
## HEATING, COOLING, VENTILATING HANDBOOK

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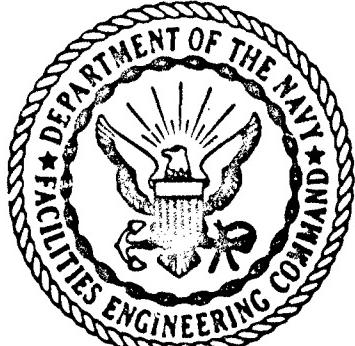
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boilers, Electrostatic precipitators, Superheaters, Air handling systems, Work units.

Abstract: This handbook provides guidance to Planners-Estimators in projecting lab  
hour requirements for workers to perform typical facilities maintenance tasks. Proper  
use of the data in this handbook will help provide more realistic, consistent, and  
timely labor hour estimates. These estimates provide bench marks which enable managers  
to evaluate and control actions based on improvement. More effective response and  
support at minimum cost can, in turn, be realized.



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**ENGINEERED  
PERFORMANCE STANDARDS  
Public Works Maintenance**

**HEATING, COOLING,  
VENTILATING  
HANDBOOK**

**NAVFAC P-704.0  
ARMY TB 420-8  
AIR FORCE AFM 85-44**

**DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND**



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FOREWORD

This handbook provides guidance to Planners-Estimators in projecting lab hour requirements for workers to perform typical facilities maintenance tasks. Proper use of the data in this handbook will help provide more realistic, consistent, and timely labor hour estimates. These estimates provide bench marks which enable managers to evaluate and control actions based on improvement. More effective response and support at minimum cost can, in turn, be realized.

Comments and suggestions regarding the handbook are invited and should be sent to:

Director  
NAVFAC Industrial Engineering Center (NIEC)  
Atlantic Division  
Naval Facilities Engineering Command  
Norfolk, Virginia 23511

Telephone (804) 444-3324  
or AUTOVON 690-3324

To facilitate forwarding of comments, addressed feedback forms are included in the back of this handbook.

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By Order of the Secretaries of the Army, the Navy, and the Air Force.

E. C. MEYER  
General, United States Army  
Chief of Staff

Official:

ROBERT M. JOYCE  
Brigadier General, United States Army  
The Adjutant General



W. M. ZOBEL  
Rear Admiral, CEC, U.S. Navy  
Commander, Naval Facilities  
Engineering Command

Official:

JAMES L. WYATT, JR.  
Colonel, USAF  
Director of Administration

LEW ALLEN, JR.  
General, USAF  
Chief of Staff

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Open or close waterside . . . . .		2
Clean fireside . . . . .		2
Clean waterside . . . . .		2
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Analyze boiler water samples . . . . .		2
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Assist boiler inspector in inspection . . . . .		
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Clean fireside . . . . .	
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#### References

1. TB-420-2, NAVFAC P-701.0, EPS General Handbook . . . . .
-------------------------------------------------------------

CRAFTS	JOB PREP.	PERCENT CRAFT ALLOW.	PAINT - ADDITIONAL		PREPARATION TIME	TASK REF.	TASK VALUE
			ONE MAN	MULTI-MAN			
BOILER WORK - PERFT. BY ANY SHOP	4	23	23	33		PMP-27	.9
CARPENTRY	GENERAL	3	18	23	SCAFFOLDING - IRON PIPE ERECT OR DISMANTLE	PER SECTION LONG PER 10' HIGH (2 - 5' SECTIONS) PER 15' HIGH (3 - 5' SECTIONS) PER 20' HIGH (4 - 5' SECTIONS)	P-701.1 .3 P-701.1 .9 P-701.1 1.8 P-701.1 2.7
ROOFING		5	18	26		ALUMINUM - PER SECTION (UP TO 5 SECTIONS HIGH)	P-701.1 .3
COOLING/VENTILATING/REFRIGERATION	3	19	21				
ELECTRICAL AND ELECTRONIC	3	19	21				
HAZARDOUS WORK: ADDED TO PREP. TIME/CRAFT	2	-	-				
HEATING	3	18	20				
JANITORIAL	2	11	13				
MACHINE SHOP	3	23	24				
MACHINE REPAIR	4	28	36				
MASONRY	GENERAL	4	15	23			
WITH PURCHASED CONCRETE		4	23	31			
MOVING AND RIGGING	3	28	40				
PAINT	GENERAL SPRAY	2	14	15			
PEST CONTROL	2	14	17				
PIPEFITTING AND PLUMBING	3	18	20				
ROADS & GROUNDS	GENERAL LABORERS	3	18	20	ADDITIONAL TRAVEL TIME		
SHEETMETAL		3	21	23			
STRUCTURAL	SHOP	3	20	26			
IRON & WELDING	FIELD	3	20	24			
TRACAGE		4	-	22			
WHARFBUILDING		5	24	32			
					EACH ADDITIONAL WORK LOCATION		
					ZONE 1	PMA-1 .074MAN	
					ZONE 2	PMA-2 0	
					ZONE 3	PMA-2 0	
					ZONE 4	PMA-2 .11	
					ZONE 5	PMA-2 .19	
					ZONE 6	PMA-2 .27	
					ZONE 7	PMA-2 .35	
					ZONE 8	PMA-2 .43	
					ZONE 9	PMA-2 .55	
					ZONE 10	PMA-2 .71	
					ZONE 11	PMA-2 .87	
					ZONE 12	PMA-2 1.03	
					ZONE 13	PMA-2 1.19	
					ZONE 14	PMA-2 1.35	
					ZONE 15	PMA-2 1.51	

CRAFTS	JOB PREP.	PERCENT CRAFT ALLOW.	PAINT - ADDITIONAL	PREPARATION TIME	TASK REF.	TASK VALUE
			ONE MAN	MULTI-MAN		
BOILER WORK - PERFT. BY ANY SHOP	4	23	23	33	PMP-27	.9
CARPENTRY	GENERAL	3	18	23	PMP-27	1.8
ROOFING		5	18	26	PMP-27	1.8
COOLING/VENTILATING/REFRIGERATION	3	19	21		PMP-27	1.8
ELECTRICAL AND ELECTRONIC	3	19	21		PMP-27	2.7
HAZARDOUS WORK: ADDED TO PREP. TIME/CRAFT	2	-	-		PMP-27	2.7
HEATING	3	18	20			
JANITORIAL	2	11	13			
MACHINE SHOP	3	23	24			
MACHINE REPAIR	4	28	36			
MASONRY	GENERAL	4	15	23		
WITH PURCHASED CONCRETE		4	23	31		
MOVING AND RIGGING	3	28	40			
PAINT	GENERAL SPRAY	2	14	15		
PEST CONTROL	2	14	17			
PIPEFITTING AND PLUMBING	3	18	20			
ROADS & GROUNDS	GENERAL LABORERS	3	18	20	ADDITIONAL TRAVEL TIME	
SHEETMETAL		3	21	23		
STRUCTURAL	SHOP	3	20	26		
IRON & WELDING	FIELD	3	20	24		
TRACAGE		4	-	22		
WHARFBUILDING		5	24	32		

## CHAPTER 1. INTRODUCTION

1. Spread Sheets. The spread sheets on the following pages are arranged by task area. Overall information is shown at the top of each page with specific task data listed down the left hand side. Various tasks, with times measured using industrial engineering techniques, are displayed on the spread sheets to provide guidance in choosing the correct group time. A more complete description of each task is provided in Chapter 3, TASK TIMES.
2. Task Times. The task times are listed numerically and the reference numbers correspond with those shown on the spread sheets or tabular listings. The task times show the operations that were combined to develop the various tasks. More detailed developmental data supporting the operation times is maintained by the NAVFAC Industrial Engineering Center.
3. General Information. Labor hour estimates obtained from spread sheets in this handbook do not include time for staging required materials at the job site. Ancillary activities, such as this type of material handling, can be estimated using data in the General Handbook (TB 420-2, NAVFAC P-701.0) as guidance. Allowances, travel time and job preparation time are additionally covered in the General Handbook. Engineered Performance Standards (EPS) should only be applied by personnel who have attended an EPS training course.

CHAPTER 2  
SPREAD SHEETS

Section 1. Cooling, Ventilating

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## TASK AREA: Air conditioning units - annual maintenance

Tasks include: (1) Shell and tube water-cooled condenser - drain and fill, remove and install end plates, punch and clean tubes, fabricate and install gaskets.

(2) All other units - clean, inspect, adjust, lubricate bearings, change oil and filter as appropriate.

NOTE: For seasonal and continuous operating systems.

DESCRIPTION		GROUP E Craft 1.8 Time hrs.	GROUP F Craft 2.9 Time hrs.	GROUP G Craft 4.4 Time hrs.	GROUP H Craft 6.0 Time hrs.	NOTE
H	3-26 tons (per unit)	1	2	3	4	over 4 use 1.67 hrs. per unit
A	A C	VT-51				
I	T O					
R	N L	25-99 tons (per unit)				over 1 use 4.318 hrs. per unit
G	I	VT-55		1		
M	A C					
H	N C	100-250 tons (per unit)				
A	D	VT-58				
N	O	3-24 tons (per unit)				
D	L	VT-49	1	2	3	4-5 over 5 use 1.372 hrs. per unit
L	I					
E	G	25-99 tons (per unit)				
M	O	VT-52		1		over 2 use 3.085 hrs. per unit
N	H	100-250 tons (per unit)				
A	L	VT-57				
C	P	3-24 tons (per unit)				
K	X	VT-50	1			
S	S S O R	over 100 tons (per unit)				
C	T	VT-53				
C	S U	100-200 tons (per unit)				
H	E R C	VT-25				
D	L	100-400 tons (per unit)				
N	L N O	VT-28				
M	A L					
S	A T E					
E	N E D					
E	D V	700-800 tons (per unit)	VT-66			use 8.629 hrs. per unit
	-					use 14.731 hrs. per unit

TASK AREA: Air conditioning units - annual maintenance

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## TASK AREA: Air conditioning units - annual maintenance

Tasks Include: (1) Shell and tube water-cooled condenser - drain and fill, remove and install end plates, punch and clean tubes, fabricate and install gaskets.

(2) All other units - clean, inspect, adjust, lubricate bearings, change oil and filter as appropriate.

NOTE: For seasonal and continuous operating systems.

DESCRIPTION	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	GROUP G Craft Time hrs.	GROUP H Craft Time hrs.	NOTE
2 3-9 tons (per unit)	VT-56	1		2	over 3 use 2.002 hrs. per unit
3 25-49 tons (per unit)	VT-61			1	over 1 use 4.859 hrs. per unit
4 100-199 tons (per unit)	VT-53				use 8.987 hrs. per unit
5 3-24 tons (per unit)	VT-62	2 (for 1 unit use Group D, 1.1 hrs.)	3	4-5	over 7 use .939 hrs. per unit
6 25-49 tons (per unit)	VT-54		1	2	over 3 use 2.289 hrs. per unit
7 25-99 tons (per unit)	VT-56	1	2	3	over 3 use 2.115 hrs. per unit
8 800-999 tons (per unit)	VT-59				use 12.385 hrs. per unit
9 3-9 tons (per unit)	VT-56	1	2	3	over 3 use 2.002 hrs. per unit
10 25-49 tons (per unit)	VT-61		1		over 1 use 4.859 hrs. per unit
11 100-199 tons (per unit)	VT-63				use 8.987 hrs. per unit
PACKAGE - TYPE(S), IF CONTAINED	3-9 tons (per unit)	VT-46	1		over 2 use 3.398 hrs. per unit
WINDOW	All sizes (per unit)	VT-43 (for 1 unit use Group D, 1.1 hrs.)	3	4-5	over 7 use .913 hrs. per unit

## TASK AREA: Air conditioning units - annual maintenance

### **TASK AREA: Air conditioning units - recurring maintenance**

**Tasks Include:** Remove and install access panel(s); clean, inspect, lubricate, add oil, make adjustments; change filters and belts; repair or replace faulty parts.

**NOTE:** Is person still in service? \_\_\_\_\_

DESCRIPTION		GROUP C Craft Time hrs.	GROUP D Craft Time hrs.	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	GROUP P Craft Time hrs.	GROUP R Craft Time hrs.	NOTE
AIR HANDLER	3-24 tons (per unit)	1	2	3	4-6			over 6 use .566 hrs. per unit
	25-250 tons (per unit)	VT-38	1	2	3			over 3 use 1.028 hrs. per unit
PACKAGE-TYPE-OPEN	3-9 tons (per unit)	VT-41	1	2	3-4			over 4 use .715 hrs. per unit
	3-24 tons (per unit)	VT-42	1	2	3-4			over 4 use .781 hrs. per unit
CENTRAL-COMPRESSION-SYSTEM	25 tons and over (per unit)	VT-44	1	2	3			over 4 use .939 hrs. per unit
	All sizes (per fan assembly)	VT-36	1	2	3			over 5 use .618 hrs. per fan assembly
AIR-COOLED-CONDENSERS-EVAPORATIVE	25 tons and over (per unit)	VT-45	1	2	3			over 3 use 1.094 hrs. per unit
	25-99 tons (per unit)	VT-47	1	2	3-4			over 4 use .710 hrs. per unit
WOOD	500-999 tons (per unit)	VT-48	1	2	3			over 1 use 2.219 hrs. per unit
	3-24 tons (per unit)	VT-40	1	2	3			over 5 use .678 hrs. per unit
METAL	25 tons and over (per unit)	VT-45	1	2	3			over 3 use 1.094 hrs. per unit
	3-9 tons (per unit)	VT-41	1	2	3-4			over 4 use .735 hrs. per unit
PACKAGE-TYPE-SELF-CONTAINED	10-49 tons (per unit)	VT-37	1	2	3			over 2 use 1.207 hrs. per unit
	All sizes (per unit)	VT-36	(for 1 unit use Group B, 0.3 hrs.)	4-5	6-8			over 16 use .267 hrs. per unit

## TASK AREA: Air conditioning units - seasonal shutdown

Tasks include: Remove and install panel, sensory inspect bearings, turn off power, turn off inspection report, pump down and drain tank as appropriate.

DESCRIPTION	GROUP B Craft Time hrs.	GROUP C Craft Time hrs.	GROUP D Craft Time hrs.	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	NOTE
AIR HANDLER Cooling only All sizes (per unit) VT-26	1	2		3-4		over 4 use .4/3 hrs. per unit
COMPRESSOR OPEN (CENTRAL COMPRESSION) SYSTEM C EVAPORATIVE (COOLING ONLY) N D E N S E R	All sizes (per unit) VT-27	1	2	3-4		over 4 use .4/3 hrs. per unit
O N D E N S E R	100-199 tons (per unit) VT-29		1	2	2	over 2 use .967 hrs. per unit
C M T O C L I N G C M T O C W E R S O A H N S H N S	1-99 tons (per unit) VT-30	1	2	3	4-5	over 5 use .572 hrs. per unit
N D E N S E R	All sizes (per fan assembly) VT-31	1	2	3-4	5-6	over 6 use 1.1 hrs. per fan assembly
C M T O C L I N G C M T O C W E R S O A H N S H N S	3-99 tons (per unit) VT-33	1	2	3	1	over 1 use .64 hrs. per unit
O C L I N G C M T O C W E R S O A H N S H N S	100-199 tons (per unit) VT-32		1			over 1 use 1.2 hrs. per unit
L I N G C M T O C W E R S O A H N S H N S	100-199 tons (per unit) VT-29		1		2	over 2 use .967 hrs. per unit
I N G C M T O C W E R S O A H N S H N S	3-99 tons (per unit) VT-30	1	2	3	4-5	over 5 use .372 hrs. per unit
N D E N S E R S O A H N S H N S	25-199 tons (per unit) VT-33	1	2	3	1	over 1 use .561 hrs. per unit
R S O A H N S H N S	100-299 tons (per unit) VT-32		1			over 1 use 1.205 hrs. per unit
A N K A L Y N G C M T O C W E R S O A H N S H N S	All sizes (per unit) VT-34	1			2	over 1 use .542 hrs. per unit
H N D O N S H N S	All sizes (per unit) VT-35	2 (for 1 unit use Group A, .13 hrs.)	1-4	5-7	4-11	over 11 use .186 hrs. per unit

## TASK AREA: Air conditioning units - seasonal shutdown

**TASK AREA:** Air conditioning units - remove and install units/components

Tasks include: Time to perform all operations required to remove and install units/components.

DESCRIPTION	GROUP E Time hrs.	GROUP F Time hrs.	GROUP G Craft 1.8	GROUP H Craft 2.9	GROUP C Craft 4.4	GROUP H Craft 6.0	NOTE
COIL (HEATING AND COOLING) VT-11	25-99 tons (per component)			1			over 1 use 3.818 hrs. per component
EVAPORATOR VT-12	25-99 tons (per component)				1		over 1 use 3.345 hrs. per component
CENTRIFUGAL (SQUIRREL CAGE) VT-73	All sizes (per component)	1		2	3		over 3 use 1.843 hrs. per component
AIR PROPELLER- TYPE VT-74	All sizes (per component)	1		2	3		over 3 use 1.928 hrs. per component
100 disposable-type filters from/to overhead plenums (average 10 plenums) (per 100 filters)	VT-65				1		over 1 use 6.158 hrs. per 100 filters (average 10 plenums)
COPO VT-6	10-50 tons (per unit)				1		over 1 use 5.824 hrs. per unit
VALVE PLATES VT-67	All sizes (per unit)				1		over 1 use 6.639 hrs. per unit
STATION THERMOSTATIC EXPANSION VALVE VT-14	All sizes (per component)				1		over 1 use 3.913 hrs. per component
AIR-COOLED VT-8	3-10 tons (per unit)				1		over 1 use 4.276 hrs. per unit
SHELL AND TUBE WATER-COOLED VT-10	25-99 tons (per unit)						use 9.755 hrs. per unit
							use 7.655 hrs. per unit

**TASK AREA:** Air conditioning units - remove and install units/components

TASK AREA: Air conditioning units - remove and install units/components

Tasks include: Time to perform all operations required to remove and install units/components

DESCRIPTION	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	GROUP G Craft Time hrs.	GROUP H Craft Time hrs.	NOTE
COOLING TOWER FAN AND MOTOR (ONLY)	All sizes (per component) VT-75	1	2	2	over 2 use 2.531 hrs. per component
AIR-COOLED CONDENSER	3-10 tons (per unit) VT-8		1		over 1 use 4.276 hrs. per unit
EVAPORATOR	3-10 tons (per unit) VT-8		1		over 1 use 4.276 hrs. per unit
ENTRIFUGAL (SQUIRREL CAKE)	All sizes (per component) VT-73			3	over 3 use 1.843 hrs. per component
PROPELLER- TYPE	All sizes (per component) VT-74			3	over 3 use 1.928 hrs. per component

TASK AREA: Air conditioning units - remove and install units/components

**TASK AREA:** Air conditioning systems/units/components - pump down, charge and evacuate

DESCRIPTION	GROUP B Craft Time hrs.	GROUP C Craft Time hrs.	GROUP D Craft Time hrs.	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	NOTE
Charge air conditioning system (per ton)		1-4			21-41	over 41 tons use .621 hrs. plus .04 hrs. per ton
Pump down air conditioning system (compressor only) (per unit)	1	2	3	4-5		over 6 use .382 hrs. per unit
Pump down air conditioning system (into receiver) (per system)	VT-2					
Pump down air conditioning system (separate cylinders) (per component)	VT-3	1	2	3		over 3 use .591 hrs. per system
Pull vacuum on air conditioning system (per system)	VT-4	1-2	3-4	5-8		over 8 tons use .279 hrs. plus .23 hrs. per cylinder
	VT-5			1		over 1 use 1.54 hrs. per air conditioning system

**TASK AREA:** Air conditioning systems/units/components - pump down, charge and evacuate

**TASK AREA:** Remove and install air conditioning components - miscellaneous

**NOTE:** These task times are for miscellaneous work that could apply to components found in more than one system/unit with the same work content.

DESCRIPTION	GROUP A Time hrs.	Craft 0.3 Time hrs.	GROUP C Time hrs.	Craft 0.6 Time hrs.	GROUP E Time hrs.	Craft 1.8 Time hrs.	GROUP F Time hrs.	Craft 2.9 Time hrs.	NOTE
I N 1 R I A S D N T S A O M S S A A T B H I / 2 - 2 tons (per unit)	Up to 1/2 ton (per unit) VT-77		1	3 (for 2 units use Group D, 1.1 hrs.)		3		4-5	over 5 use .697 hrs. per unit
O L P S N D L X S D T E H I N R A Up to 3 tons (per unit)	VT-16				1		2		over 2 use 1.475 hrs. per unit
N E I S G H S A O A S U V B H I / 2 - 2 tons (per unit)	Up to 1/2 ton (per unit) VT-26						1		over 1 use 2.230 hrs. per unit
N E I S G H S A O A S U V B H I / 2 - 2 tons (per unit)	Up to 1/2 ton (per unit) VT-76		1	2	5-6 (for 3-4 units use Group D, 1.1 hrs.)	7-10		7-10	over 10 use .328 hrs. per unit
N E I S G H S A O A S U V B H I / 2 - 2 tons (per unit)	Up to 1/2 ton (per unit) VT-17				3 (for 2 units use Group D, 1.1 hrs.)		4-5		over 5 use .604 hrs. per unit
E O V	Belt on water cooler (per unit) VT-69	1		2-3	7-9 (for 4-6 units use Group D, 1.1 hrs.)	10-15			over 15 use .232 hrs. per unit
A N D	Disposable type filter in separate overhead unit (per filter)		1	2-3	7-9 (for 4-6 filters use Group D, 1.1 hrs.)	10-15			over 15 use .231 hrs. per filter
I N S T A L	Set of 3 belts on a compressor in an open (central compression) air conditioning system (per set)				1	2-3	4-5		over 5 use .701 hrs. per set
	VT-21				VT-22				

**TASK AREA:** Remove and install air conditioning components - miscellaneous

**TASK AREA:** Remove and install air conditioning components - miscellaneous

**NOTE:** These task times are for miscellaneous work that could apply to components found in more than one system/unit with the same work content.

DESCRIPTION	GROUP C Craft Time hrs.	GROUP D Craft Time hrs.	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	NOTE
R Electric motor (under 1 HP) (per component)	1	2	3-4	5-6	over 6 use .535 hrs. per component
E Strainer or dryer in open (central compression) air conditioning system (per component)	VT-7		1	2	over 2 use 1.639 hrs. per component
M Door basket on domestic refrigerator (per gasket)	VT-15				over 2 use 1.214 hrs. per gasket
O					
V					
Z					
F Centrifugal (per assembly)	VT-68				over 1 use 1.843 hrs. per assembly
A A M	VT-73		1		
N N O					
D T Propeller-type (per assembly)	VT-74		1		over 1 use 1.928 hrs. per assembly
A O					
I N R					
N D	In cooling tower (per unit)	VT-75			over 1 use 2.531 hrs. per unit
S Seals and bearings in water pump (per component)	VT-76			1	over 2 use 1.576 hrs. per component
T 3 HP motor (per component)	VT-72			2	over 7 use .509 hrs. per component
A					
L					
Float linkage in water towers or condensers (per component)	VT-23	1	2	3-4	over 2 use 1.243 hrs. per bearing
Replace solid bearing with split type bearing on centrifugal (split cage) fan shaft (per bearing)	VT-18		1		
				2	
<b>TASK AREA:</b>	Remove and install air conditioning components - miscellaneous				

**TASK AREA:** Air conditioning units/components - miscellaneous

**NOTE:** These task times are for miscellaneous work that could apply to components found in more than one system/unit with the same work content.

DESCRIPTION	GROUP C Craft Time hrs.	GROUP H Craft Time hrs.	GROUP I Craft Time hrs.	GROUP J Craft Time hrs.	GROUP K Craft Time hrs.	GROUP L Craft Time hrs.	NOTE
R E M O V E Receiver/King Valve in open (central compression) air conditioning system (per component)	1			2	3	3	over 3 use 3,959 hrs. per component
V E N T I L A T O R Thermostatic expansion valve in open (central compression) air conditioning system (per component)	1			2	3	3	over 3 use 3,913 hrs. per component
D I S P O S A B L E 100 disposable-type filters (average 10 pleums) (per 100 filters)	1					2	over 2 use 6,158 hrs. per 100 filters
A L L V A L V E S Valve plates on compressor in open (central compression) air conditioning system (per unit)	1			2	3	3	over 3 use 4,639 hrs. per unit
V T - 67							
D I S A S S E M B L E , C L E A N , I N S P E C T A S S E M B L E , E V A C U A T E C O M P R E S S O R 10-25 tons (per unit)	1			2			over 2 use 5,179 hrs. per unit
V T - 70							
A N N U A L M A I N T E N A N C E O N A B S O R B E R O R G E N E R A T O R 50-100 tons (per unit)				1			over 1 use 9,323 hrs. per unit
V T - 71							
A N N U A L M A I N T E N A N C E O N A B S O R B E R O R G E N E R A T O R 100 tons absorption system (per unit)				1			over 2 use 6,986 hrs. per unit
V T - 19							
A N N U A L M A I N T E N A N C E O N A B S O R B E R O R G E N E R A T O R 300 tons absorption system (per unit)					1		over 1 use 11,436 hrs. per unit
V T - 20							

**TASK AREA:** Air conditioning units/components - miscellaneous

**Section 2. Heating**

**TASK AREA:** Fire or water tube boiler - assist boiler inspector in inspection

External Inspection: Includes all external boiler parts and components.

Internal Inspection: Includes all internal boiler parts and components.

Operating Inspection: Includes using inspector gage, checking and adjusting safety valve, waiting for maximum pressure.

Hydrostatic Inspection: Includes using hand pump, search and repair minor leaks; no time to fill or drain drum.

DESCRIPTION	GROUP A Craft Time hrs.	GROUP B Craft Time hrs.	GROUP C Craft Time hrs.	GROUP D Craft Time hrs.	GROUP E Craft Time hrs.	NOTE
I E N X S T P E E R C N T A I L O N N T P V T - 200	1	2	3	4-5	over 5 use .383 hrs. per boiler	
A I L O N N T P V T - 201		1	2-3	4	over 4 use .664 hrs. per boiler	
I N I N S T P E R C N T A I L O N N T P V T - 202		1	2	3	over 3 use .671 hrs. per boiler	
O P E I R N A S T P I E N C G C T I E N S T V T - 203				1	over 1 use 1.426 hrs. per boiler	
E I R N A S T P V T - 204		1	2	3-4	over 4 use .533 hrs. per boiler	
T I E N S T V T - 205			1	2	over 2 use .876 hrs. per boiler	

**TASK AREA:** Fire or water tube boiler - assist boiler inspector in inspection

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## TASK AREA: Fire or water tube boiler - assist boiler inspector in inspection

External Inspection: Includes all external boiler parts and components.

Internal Inspection: Includes all internal boiler parts and components.

Operating Inspection: Includes using inspector's age, checking and adjusting safety valve, waiting for maximum pressure.

Hydrostatic Inspection: Includes using hand pump, search and repair minor leaks; no time to fill or drain drum.

DESCRIPTION	GROUP D Craft Time hrs.	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	GROUP G Craft Time hrs.	GROUP C Craft Time hrs.	GROUP B Craft Time hrs.	GROUP A Craft Time hrs.	NOTE
T E H S Y T D R I O N S S T P A E T C I T C I O N N	Fire tube (per boiler)  VT-206		1	2	3			over 3 use 1.480 hrs. per boiler
I N I T E N E X S R T P N E E A R C L N T A I A L O N N D	Water tube (per boiler)  VT-207		1	2	2			over 2 use 2.436 hrs. per boiler
E H I I Y N I N D S T R P T E N S O E N A T S C A L A T T L A I O N C D	Fire tube (per boiler)  VT-208		1	2	3			over 4 use 1.053 hrs. per boiler
E H I I Y N I N D S T R P T E N S O E N A T S C A L A T T L A I O N C D	Water tube (per boiler)  VT-209		1	2	4			over 2 use 1.890 hrs. per boiler
E H I I Y N I N D S T R P T E N S O E N A T S C A L A T T L A I O N C D	Fire tube (per boiler)  VT-210		1	2	2			over 2 use 2.534 hrs. per boiler
E H I I Y N I N D S T R P T E N S O E N A T S C A L A T T L A I O N C D	Water tube (per boiler)  VT-211		1	1	1			over 1 use 4.326 hrs. per boiler

TASK AREA: Fire or water tube boiler - assist boiler inspector in inspection

TASK AREA: Fire tube or water tube boiler, superheater, precipitator, or preheater-open or close fireside						
Open or close fireside: Consists of removing and installing a combination of doors, plates, steel strips, firebricks, etc. Includes all work necessary to remove or install each piece.						
Total time shall be obtained as follows:						
1) Determine total number of each component to be removed or installed.						
2) Find group time value for each number of components and						
3) Add group time values together.						
NOTE: Quantities given are for removal or installation and must be doubled for removal and installation.						
DESCRIPTION	GROUP A Craft .13	GROUP B Craft 0.3	GROUP C Craft 0.6	GROUP D Craft 1.1	GROUP E Craft 1.8	GROUP F Craft 1.8
	Craft Time hrs.					
R Tube sheet compartment door (per door)	1-2	3-5				
E	VT-212					
R Fire box door (per door)	1-2					
E	VT-213					
M Ash pit door (per door)			5-8			
O	VT-214					
V Access pass door (per door)	1-2	3-4	5-8			
E	VT-215					
E Explosion proof doors (per door)	1-2	3-4	5-8			
O	VT-216					
R Superheater door (per door)	1	2-3	4-8			
I	VT-217					
N Precipitator door (per door)		2-3	4-8			
S	VT-218					
T Access door (per door)	1-2	3-4	5-8			
A	VT-219					
L Clean-out door (per door)	1-7	8-15				
L	VT-220					
Peehole door (per door)	1-7	8-15	16-31			
	VT-221					

TASK AREA: Fire tube or water tube boiler, superheater, precipitator, or preheater-open or close fireside

TASK AREA: Fire tube or water tube boiler, superheater, precipitator or preheater-open or close fireside	
Open or close fireside: Consists of removing and installing a combination of doors, plates, steel strips, firebricks, etc. Includes all work necessary to remove or install each piece.	
Total time shall be obtained as follows: 1) Determine total number of each component to be removed or installed. 2) Find group time value for each number of components and 3) Add group time values together.	
NOTE: Quantities given are for remove OR install and must be doubled for remove and install.	
DESCRIPTION	GROUP A Craft Time hrs.
Inspection plates (bolted) (per plate)	1-2
M VT-222	3-4
N Steel sheet strip (per strip)	1-15
O V VT-223	15-30
P Firebox top (per top)	1-4
Q I VT-224	5-9
R S Firebox top insulation	10-19
T A VT-225	9-15
U L Firebrick (per brick)	16-32
V T-226	31-61
W	62-106

TASK AREA: Fire tube or water tube boiler, superheater, precipitator-open or close fireside

**TASK AREA:** Fire tube or water tube boiler-open or close waterside

**Open or close waterside:** Consists of removing and installing a combination of plugs, manhole and handhole covers.

Use of ladders where required is included.

Total time shall be obtained as follows: 1) Determine total number of each component to be removed or installed

2) Find group time value for each number of components and

3) Add group time values together.

DESCRIPTION	GROUP A Time hrs.	GROUP B Time hrs.	GROUP C Time hrs.	GROUP D Time hrs.	GROUP E Craft 1.1 hrs.	GROUP E Craft 1.8 hrs.
R 1 E N H O S O R T V A E L L I	Shell plug (per plug) VT-227	1-6	7-13			
2 E E M O V E	Manhole cover (per cover) VT-228	1-2	3-4	5-8	9-16	
N T S T A L L	Handhole cover (per cover) VT-229	1-3	4-6	7-13	14-23	24-36
I N S T A L L	Manhole cover (per cover) VT-230		1	2-3	4-6	7-10
P P P P P P P P	Handhole cover (per cover) VT-231	1	2-3	4-6	7-11	12-18
Prepare to drain boiler (per boiler) VT-232						
Fill and inspect boiler (per boiler) VT-233				1	2	

**TASK AREA:** Fire tube or water tube boiler-open or close waterside

TASK AREA: Water tube boiler-clean fireside, waterside; air preheater (fireside), precipitator (fireside), superheater						
Description		GROUP D Time hrs.	GROUP P Time hrs.	Craft 1.1	GROUP G Craft 4.4 Time hrs.	GROUP C Craft 4.4 Time hrs.
W	5" ID x 20' LONG DRUM	High pressure water only - no turbinizing- to 800 tubes (per boiler)	1			
A		VT-242				
T						
E						
R						
S						
I	3" ID x 10' LONG DRUM	Turbined-60 (1" to 3") tubes-10' to 20' long (per boiler)	1			
D		VT-243				
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TASK AREA Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater						
Fireside heavy slag:		Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping.		Vacuum fire box top.		
Fireside light slag:		Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping.			No time to vacuum fire box top.	
Waterside:		Wash and scrape drum.			Turbining tool in tubes. No time for remove or install baffling.	
Air preheater:		Use water hose in tubes. Clean smoke box under air preheater tubes using air hose and shovel.			No time to effect oil disassembly.	
Precipitator:		Use airhose; blow out compartment at top of tubes, push airhose into tubes.			No time to effect oil disassembly.	
Superheater:		Use scraper; clean header box by vacuuming.			No time to effect oil disassembly.	
No time to effect oil disassembly stafford, clean superheater tubes of header, air preheater or precipitator-						
DESCRIPTION	GROUP H	Craft 6.0	GROUP I	Craft 8.0	GROUP K	Craft 12.5
		Time hrs.		Time hrs.		Time hrs.
F HEAVY 4' X 10' X 15' fire box - 110 tubes (per boiler)						
I SLAG	VT-235					
R						
E LIGHT 4' X 10' X 15' fire box - 166 tubes (per boiler)						
S SLAG	VT-236					
I						
D 8' X 13' X 20' fire box - 182 tubes (per boiler)						
E	VT-236					
R						
S 3" ID X 10' long drum 110 (1" to 3") tubes - 10'-20' long						
A (per boiler)	VT-244					
T						
E						
R						
S 3" ID X 20' long drum 141 (2 1/2" to 4") tubes - 30'-50' long						
I (per boiler)	VT-246					
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DESCRIPTION		GROUP N Craft Time hrs.	GROUP O Craft Time hrs.	GROUP P Craft Time hrs.	GROUP Q Craft Time hrs.	GROUP R Craft Time hrs.	GROUP S Craft Time hrs.	GROUP T Craft Time hrs.	GROUP U Craft Time hrs.	GROUP V Craft Time hrs.
V	8' X 13' X 20' fire box - 182 tubes (per boiler)	VT-239								
P	HEAVY SLAG	8' X 16' X 20' fire box - 420 tubes (per boiler)	VT-240							
I	SLAG	16' X 20' X 30' fire box - 600 tubes (per boiler)	VT-241							
S		10' X 16' X 20' fire box - 317 tubes (per boiler)	VT-247							
I		16' X 20' X 30' fire box - 400 tubes (per boiler)	VT-248							
D		5' ID X 20' long drum 4.5 (2 1/2" to 4") tubes - 30' to 50' long	VT-249							
E		5' ID X 20' long drum 590 (2 1/2" to 4") tubes - 30' to 50' long	VT-250							
F		5' ID X 20' long drum 732 (2 1/2" to 4") tubes - 30' to 50' long	VT-251							

TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater

Fireside heavy slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. Vacuum fire box top.

Fireside light slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. No time to vacuum fire box top. Turbine tool in tubes. No time for remove or install baffle.

Waterside: Wash and scrape drum.

Air Preheater: Use water hose in tubes. Clean smoke box under air preheater tubes using airhose and shovel.

Precipitator: Use airhose; blow out compartment at top of tubes, push airhose into tubes.

Superheater: Use scraper; clean header box by vacuuming.

No time to erect or dismantle scaffold, clean superheater tubes or header, air preheater or precipitator.

TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater						
Fireside Heavy slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. Vacuum fire box top.						
Fireside light slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. No time to vacuum fire box top.						
Waterside: Wash and scrape drum.						
Air Preheater: Use water hose in tubes. Clean smoke box under air preheater tubes using airhose and shovel.						
Precipitator: Use scraper; clean header box at top of tubes, push airhose into tubes.						
Superheater: Use scraper; clean header box by vacuuming.						
No time to erect or dismantle scaffold, clean superheater tubes or header, air preheater or precipitator-						
DESCRIPTION	GROUP K	Craft 12.5 Time hrs.	GROUP M	Craft 20.0 Time hrs.	GROUP P	Craft 29.0 Time hrs.
432 (2" X 20') tubes (per boiler)	A I R P R E H E A T E R	1	VT-252		1	
675 (> 1/2" X 30') tubes (per boiler)	H E A T E R ( P R E H E A T E R S I D E)		VT-253			
1024 (2 1/2" X 30') tubes (per boiler)			VT-256		1	

TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater

**TASK AREA** Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum

CONTINUED ON NEXT PAGE

Fire tubes are cleaned by using a tube scraper or pneumatic turbining tool.

Tube sheet compartments are cleaned using vacuum and broom.

Fire box: Cleaned using broom, shovel and vacuum.

Waterside: Cleaned by washing interior of drum with hose and inspecting work.

DESCRIPTION	GROUP A Craft Time hrs.	GROUP B Craft Time hrs.	GROUP C Craft Time hrs.	GROUP D Craft Time hrs.	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.
Tube scraper (per tube)	VT-257	1-19	20-42	43-88	89-156	157-247
Pneumatic turbinig (per tube)	VT-258		1-10	11-31	32-62	63-104
Tube scraper (per tube)	VT-259	1-13	14-28	29-58	59-104	105-164
Pneumatic turbinig (per tube)	VT-260		1-7	8-20	21-41	42-69
Tube scraper (per tube)	VT-261	1-9	10-21	22-44	45-78	79-123
Pneumatic turbinig (per tube)	VT-262		1-5	6-15	16-31	32-52
Tube scraper (per tube)						
Pneumatic turbinig (per tube)	VT-263	1-4	5-12	13-25	26-41	
Tube sheet compartment (per compartment)	VT-264		1	2		
Fire box (per fire box)	VT-265		1	2		
	VT-266					
Fire tube boiler drum interior	VT-267					
	VT-268					

**TASK AREA:** Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum

## TASK AREA: Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum

Fire tubes: Cleaned by using a tube scraper or pneumatic turbining tool.

Tube sheet compartments: Cleaned using a vacuum and broom.

Fire boxes: Cleaned using broom, shovel, and vacuum.

Waterside: Cleaned by washing interior of drum with hose and inspecting work.

DESCRIPTION	GROUP P Time hrs.	GROUP C Craft 4.4 Time hrs.	GROUP H Craft 6.0 Time hrs.	GROUP I Craft 8.0 Time hrs.	GROUP J Craft 10.0 Time hrs.	
					Time hrs.	Time hrs.
Tube scraper (per tube)	VT-257	248-06	407-588			
Pneumatic turbinning (per tube)	VT-258	105-177	178-260	261-354	355-458	459-562
Tube scraper (per tube)	VT-259	165-270	271-392	393-528		
Pneumatic turbinning (per tube)	VT-260	70-118	119-173	174-236	237-305	306-375
Tube scraper (per tube)	VT-261	124-201	204-294	295-396	397-510	
Pneumatic turbinning (per tube)	VT-262	53-88	89-110	111-177	178-229	230-281
Tube scraper (per tube)	VT-263	42-70	71-104	105-141	142-183	184-225
Tube sheet compartment (per compartment)	VT-264					
Fire box (per fire box)	VT-265					
Fire tube boiler drum interior	VT-269	Fire tube boller 6,696 lb/hr or 200 HP				

TASK AREA: Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum

**Pipe tubes:** Cleaned by using a cube scraper or pneumatic turbine tool.

DESCRIPTION	GROUP K Time hrs.	Craft Time hrs.	GROUP L Craft Time hrs.	GROUP M Craft Time hrs.	GROUP N Craft Time hrs.	GROUP O Craft Time hrs.
Tube scraper (per tube)	VT-259					
Pneumatic turbinisng (per tube)		376-479	480-618			
Tube scraper (per tube)	VT-260					
Pneumatic turbinisng (per tube)		262-359	360-463	364-567		
Tube scraper (per tube)	VT-261					
Pneumatic turbinisng (per tube)		224-287	288-370	371-454	455-537	
Tube scraper (per tube)	VT-263					
Pneumatic turbinisng (per tube)						

## TASK AREA: Boiler tubes-Remove and install tubes to 30' long and 4" OD

- Method 1: Remove boiler tubes through manhole or handhole without cutting into smaller sections and install new tubes.  
 Method 2: Remove boiler tubes through manhole by cutting into smaller sections and install new tubes.  
 Method 3: Remove and install tubes through own hole and tube sheet.

DESCRIPTION	GROUP E Craft Time hrs.	GROUP F Craft Time hrs.	GROUP G Craft Time hrs.	GROUP H Craft Time hrs.	GROUP I Craft Time hrs.	GROUP J Craft Time hrs.	GROUP K Craft Time hrs.	GROUP L Craft Time hrs.	GROUP M Craft Time hrs.
Method 1 (per tube)	2		5-6		9-10		14-17		22-26
VT-270									
Method 2 (per tube)	2		5-6		9-10		13-16		21-25
VT-271									
Method 3 (per tube)	2		4-5		8-9		12-14		20-23
VT-272									
Air preheater tubes (per tube)	2		4-5		8-9		12-14		20-23
VT-273									
Tube sheet compartment door and door frame (per door)	2		5-6						
VT-274									
NOTE: When hoist is required for reinstalling boiler tubes, add .12 hrs. per tube installed in this manner.									
VT-275									
TASK AREA: Boiler tubes-remove and install tubes to 30' long and 4" OD									

**TASK AREA: Boiler tubes-remove and install tubes to 30' long and 4" OD**

- Method 1: Remove boiler tubes through manhole or handhole without cutting into smaller sections, and install new tubes.  
 Method 2: Remove boiler tubes through manhole by cutting into smaller sections, and install new tubes.  
 Method 3: Remove and install tubes through own hole in tube sheet.

DESCRIPTION	GROUP P Time hrs.	Craft 29.0 Time hrs.	GROUP R Craft 45.0 Time hrs.	GROUP T Craft 65.0 Time hrs.	GROUP V Craft 85.0 Time hrs.	NOTE
Method 1 (per tube) VT-270	29-36	46-57	71-82	93-106		Add .82 hrs. for each additional tube
Method 2 (per tube) VT-271	31-37	47-58	70-81	94-104		Add .86 hrs. for each additional tube
Method 3 (per tube) VT-272	28-34	43-53	64-74	86-95		Add .94 hrs. for each additional tube
Air preheater tubes (per tube) VT-273	28-34	43-53	64-74	86-95		Add .94 hrs. for each additional tube
NOTE: When hoist is required for reinstalling boiler tubes, add .12 hrs. for tube installed in this manner. VT-275						

**TASK AREA: Boiler tubes-remove and install tubes to 30' long and 4" OD**

**TASK AREA:** Sectional boiler, cast iron, low pressure - remove and install push nipples

Remove and install push nipples includes cleaning nipples and fabricating new gaskets.  
Normally there are an average of 3 push nipples per boiler section.

DESCRIPTION	GROUP M Craft Time hrs.	GROUP N Craft Time hrs.	GROUP P Craft Time hrs.	GROUP Q Craft Time hrs.	GROUP R Craft Time hrs.	NOTE
7 boiler sections  (21 push nipples)						NOTE: Time for more then 13 boiler sections may be figured by adding 2.45 hrs. for each additional section
VT-276						to the above group time value.
9 boiler sections  (27 push nipples)			per 27 push nipples			
VT-276						
11 boiler sections  (33 push nipples)				per 33 push nipples		
VT-276						
13 boiler sections  (39 push nipples)					per 39 push nipples	
VT-276						
<b>TASK AREA:</b> Sectional boiler, cast iron, low pressure - remove and install push nipples						

**TASK AREA:** Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble

**Clean and inspect:** Includes cleaning component parts and heater housing, lubrication of motors and blowers, and checking unit operation.

**Install:** Includes assembling necessary parts, making any necessary brackets, putting unit in place and connecting fuel lines and vent stacks; use ladder or scaffold as required.

**Repair:** Includes repair an average of two (2) leaks.

DESCRIPTION	GROUP F Time hrs.	GROUP G Time hrs.	GROUP H Time hrs.	GROUP I Craft hrs.	GROUP J Craft hrs.	NOTE
Install new unit heater (per heater)	1		2	3		over 3 use 2.776 hrs. per heater
Remove, clean, inspect and install heater (per heater)			2			over 2 use 3.282 hrs. per heater
Remove old heater and install new heater (per heater)		1		2		over 2 use 3.765 hrs. per heater
Remove, disassemble, clean, inspect, test repair and install heater (per heater)				1		over 1 use 5.395 hrs. per heater

**TASK AREA:** Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble

**TASK AREA** Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble

DESCRIPTION	GROUP C Craft Time hrs.	GROUP D Craft 1.1 Time hrs.	GROUP E Craft 1.8 Time hrs.	GROUP F Craft 2.9 Time hrs.	NOTE
Clean and inspect heater (per heater) VT-277	1	2	3	4-6	over 6 use .58 hrs. per heater
G Install unit (per furnace) VT-281	1	2	3	4-6	over 6 use .561 hrs. per furnace
F Clean unit (per furnace) VT-282	1	2	3	4-6	over 6 use .590 hrs. per furnace
I Remove and install unit (per furnace) VT-283		1	2	3	over 3 use 1.067 hrs. per furnace
O Install unit (per furnace) VT-281	1	2	3	4-6	over 6 use .561 hrs. per furnace
R Clean unit (per furnace) VT-285	1	2	3	3	over 3 use .933 hrs. per furnace
E Remove and install unit (per furnace) VT-283	1	2	3	3	over 3 use 1.067 hrs. per furnace
N Clean unit (per furnace) VT-281	1	2	3	3	over 3 use .933 hrs. per furnace
A Remove and install unit (per furnace) VT-283	1	2	3	3	over 3 use 1.067 hrs. per furnace
C Apartment sized space heater or floor furnace-disassemble, clean, inspect, and reassemble (per heater) VT-286	1	2	3-4	5-6	over 6 use .547 hrs. per heater
S Includes clean chimney and carburetor (per heater) VT-287	1	2	3	3	over 3 use .966 hrs. per heater
L Install heater (per heater) VT-288	1	2	3	4-6	over 6 use .598 hrs. per heater
H Hot water heater (gas fired-30 gal.)	Clean heater (per heater) VT-290	1	2	3-4	over 4 use .876 hrs. per heater
P Remove and install heater (per heater) VT-289		1		2	over 2 use 1.231 hrs. per heater
A Apartment size gas unit heater	Disassemble, clean, lubricate, inspect, reassemble including chimney (per heater) VT-291	1		2	over 4 use .744 hrs. per heater

**TASK AREA:** Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble

**TASK AREA** Blowers and furnaces - blowers, miscellaneous-disassemable, clean, lubricate, inspect, assemble, regulate

DESCRIPTION	GROUP A	Craft 13	GROUP B	(Fr. 1 0.3 Time hrs.	GROUP C	Frust 0.6 Time hrs.	GROUP D	Craft 1.1 Time hrs.	NOTE
Cold water blower unit with (2) 8" centrifugal (squirrel cage) fans (per blower) VT-292		1		2		3			over 3 use .358 hrs. per blower unit
Dismantle, clean, inspect, assemble blower unit with electric and pneumatic controls (a) 8" centrifugal (squirrel cage) fans (per blower) VT-293					1				over 1 use .911 hrs. per blower unit
Regulate blower unit thermostat and room thermostat (per blower) VT-294	1	2		3-5	6-9				over 9 use .166 hrs. per blower unit
Hot air furnace, gun type, (up to 770,000 BTU) off-season maintenance (per furnace) VT-295					1				over 1 use 1.238 hrs. per furnace
Clean fuel oil filter, renew element and basket (per furnace) VT-297	1-2	3-5		6-10	11-18				over 18 use .08 hrs. per furnace
Clean, inspect, adjust electrode/nozzle assembly (per furnace) VT-298	1	2		3-4	5-8				over 8 use .173 hrs. per furnace
Service fuel unit - includes fuel oil pump, forced draft blower and motor (per furnace) VT-299	1	2		3-4	5-8				over 8 use .169 hrs. per furnace
Service furnace fire box and flue (per furnace) VT-300				1	2-3				over 3 use .412 hrs. per furnace
Service furnace stack switch (per furnace) VT-301	1-2	3-4		5-8	9-15				over 15 use .09 hrs. per furnace
Service air circulation fan and motor (per furnace) VT-302		1		2-3	4-6				over 6 use .210 hrs. per furnace
Conduct furnace operational check (per furnace) VT-303	1	2-3		4-7	8-12				over 12 use .110 hrs. per furnace

**TASK AREA:** Blowers and furnaces - blowers, miscellaneous-disassemable, clean, lubricate, inspect, assemble, regulate

**TASK AREA:** Analyze boiler water samples

Analyze samples of boiler water from fire tube boilers that are treated with chemicals.

DESCRIPTION	GROUP B Craft Time hrs	GROUP C Craft Time hrs	GROUP D Craft Time hrs	GROUP E Craft Time hrs	NOTE
					Over 8 use .273 hrs per boiler

**ANALYZE**  
**BOILER**  
**WATER**  
**SAMPLES**  
**(PER BOILER)**

VT-296

6-8

3-5

**CHAPTER 3**

**TASK TIMES**

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VT-1 CHARGE AIR CONDITIONING SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-P552	REMOVE AND INSTALL SERVICE VALVE CAP NUTS	.08720	SYSTEM	
2	PWU-1-8000	INSTALL AND REMOVE GAUGE/HOSE MANIFOLD	.03560	SYSTEM	
3	PWU-14-IV	RELEASE AND TIGHTEN VALVES	.06768	SYSTEM	
4	PWV-1-VIII	CHARGE ANY SIZE AIR CONDITIONING SYSTEM WITH REFRIGERANT	.01758	SYSTEM	
5	PWB-5-I	MOVE CYLINDER OF REFRIGERANT	.10359	SYSTEM	
6	6211	CHECK OPERATION OF SYSTEM	.23200	SYSTEM	

VT-1 • .62145 HRS PER SYSTEM • .03789 HRS PER TONNAGE

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VT-2 PUMP DOWN AIR CONDITIONING SYSTEM: COMPRESSOR ONLY.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-P552	REMOVE AND INSTALL VALVE CAP NUTS	.08720	SYSTEM	
2	PWU-1-8000	INSTALL AND REMOVE GAUGE/HOSE MANIFOLDS	.03560	SYSTEM	
3	PWG-14-IV	RELEASE AND TIGHTEN VALVE	.06768	SYSTEM	
4	PWV-1-I	RUN COMPRESSOR TO PUMP DOWN	.19172	SYSTEM	

VT-2 • .39220 HRS PER SYSTEM

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VT-3 PUMP DOWN AIR CONDITIONING SYSTEM INTO RECEIVER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-P552	REMOVE AND INSTALL VALVE CAP NUTS	.08720	SYSTEM	
2	PWU-1-8000	INSTALL AND REMOVE GAUGE/HOSE MANIFOLDS	.03560	SYSTEM	
3	PWG-14-IV	RELEASE AND TIGHTEN VALVE	.06768	SYSTEM	
4	PWV-1-VIII	PUMP DOWN SYSTEM INTO RECEIVER	.40083	SYSTEM	

VT-3 • .59129 HRS PER SYSTEM

VT-4 PUMP DOWN AIR CONDITIONING SYSTEMS INTO SEPARATE CYLINDERS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8552	REMOVE AND INSTALL VALVE CAP NUTS	.08720	SYSTEM	
2	PWNU-1-8000	INSTALL AND REMOVE GAUGE/HOSE MANIFOLDS	.07123	SYSTEM	
3	PWG-14-IV	OPEN AND CLOSE VALVES	.06768	SYSTEM	
4	PWV-1-XIII	PUMP AIR CONDITIONING SYSTEM DOWN INTO SEPARATE CYLINDER	.01889	SYSTEM	
5	PWA-5-1	MOVE CYLINDER OF REFRIGERANT	.23402	CYLINDER	
VT-4 =	1.27569 HRS PER SYSTEM	+ .23402 HRS PER CYLINDER			

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VT-5 PULL VACUUM ON AIR CONDITIONING SYSTEM

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8552	REMOVE AND INSTALL VALVE CAP NUTS	.08720	SYSTEM	
2	PWNU-1-8000	INSTALL AND REMOVE GAUGE/HOSE MANIFOLDS	.03560	SYSTEM	
3	PWG-14-IV	OPEN AND CLOSE COMPRESSOR SERVICE VALVES	.06769	SYSTEM	
4	PWV-1-XVIII	PULL VACUUM	1.32348	SYSTEM	
VT-5 =	1.51396 HRS PER SYSTEM				

	VT-6	REMOVE AND INSTALL COMPRESSOR, 10 TO 50 TONS, IN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM				
NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V36	
1	PNU-1-8552	PUMP DOWN COMPRESSOR	.38220	SYSTEM		
2	PNU-1-8552	REMOVE AND INSTALL BOLTS IN INTAKE AND DISCHARGE VALVES	.17460	SYSTEM		
3	PNU-1-8011	REMOVE AND INSTALL INTAKE AND DISCHARGE VALVES	.14640	SYSTEM		
4	PNU-1-8552	REMOVE AND INSTALL OIL LINE AND GASES	.21910	SYSTEM		
5	PNU-1-8552	REMOVE AND INSTALL BOLTS IN VALVE FITTINGS	.17660	SYSTEM		
6	PNU-1-8011	REMOVE AND INSTALL VALVE FITTINGS	.14640	SYSTEM		
7	PNU-1-8010	PLUG AND UNPLUG PORT OPENINGS	.10490	SYSTEM		
8	PNU-1-8010	PULL AWAY AND PUSH VALVE TO COMPRESSOR	.09260	SYSTEM		
9	PNU-1-8000	REMOVE AND INSTALL BOLTS FOR BELT GUARD	.07120	SYSTEM		
10	PNU-1-8021	REMOVE AND INSTALL BELT GUARD	.04900	SYSTEM		
11	PNU-1-8553	LOOSEN AND TIGHTEN MOTOR BASE BOLTS	.06960	SYSTEM		
12	PNU-1-8010	REMOVE AND INSTALL BELTS	.10460	SYSTEM		
13	PNU-1-8552	REMOVE AND INSTALL COMPRESSOR BASE BOLTS	.08720	SYSTEM		
14	PNU-10-XVI	REMOVE AND INSTALL COMPRESSOR	1.10240	SYSTEM		
15	PNU-1-8011	REMOVE AND INSTALL FLYWHEEL	.07320	SYSTEM		
16	VT-1	CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM	.62145	SYSTEM		
17	PNU-1-II	PUT COMPRESSOR INTO OPERATION	.35211	SYSTEM		
18	4211	CHECK OPERATION OF SYSTEM	.29200	SYSTEM		
19	PNA-5-II	MATERIAL HANDLING	.52154	SYSTEM		
VT-6 =	5.82357 HRS PER SYSTEM					

	VT-7	REMOVE AND INSTALL ELECTRIC MOTOR (UNDER 1-HP)				
NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V36	
1	PNU-1-9000	REMOVE AND INSTALL SCREW	.07120	JOB		
2	PNU-1-8010	REMOVE AND INSTALL PANEL	.02620	JOB		
3	PNG-4-II	DISCONNECT WIRING TO MOTOR	.00964	JOB		
4	PNU-1-8010	PLUG AND UNPLUG UNIT	.02623	JOB		
5	PNU-1-8552	REMOVE AND INSTALL BASE BOLTS	.08720	JOB		
6	PNU-1-8C12	REMOVE AND INSTALL PCOCR	.01780	JOB		
7	PNU-1-8010	REMOVE AND INSTALL BELT	.02620	JOB		
8	4209	CHECK OPERATION OF MOTOR	.16700	JOB		
9	PNA-5-II	MATERIAL HANDLING	.10353	JOB		
VT-7 =	5.35503 HRS PER JOB					

VT-8 REMOVE AND INSTALL AIR-COOLED CONDENSER OR EVAPORATOR IN A 3-10 TON PACKAGE-TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PVV-3-X1	REMOVE AND INSTALL ACCESS PANEL	.22392	SYSTEM	
2	VT-6	PUMP AIR CONDITIONING SYSTEM DOWN INTO SEPARATE CYLINDER #1 CYLINDER	.27949	SYSTEM	
3	PHQ-19-VII	REMOVE AND INSTALL FITTING	.39600	SYSTEM	
4	PHMU-1-8010	PLUG AND UNPLUG PORT OPENING	.10480	SYSTEM	
5	PHV-1-IV	PREPARE TO REMOVE AIR COOLED CONDENSER	.17830	SYSTEM	
6	PHMU-1-8000	REMOVE AND INSTALL BOLT	.14240	SYSTEM	
7	PHMU-1-8022	REMOVE AND INSTALL CONDENSER	.20560	SYSTEM	
8	PH -1-V	PUT AIR COOLED CONDENSER INTO OPERATION	.91673	SYSTEM	
9	VT-1	CHARGE PACKAGE-TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM AFTER REPAIR	.62145	SYSTEM	
10	PWA-3-II	MATERIAL HANDLING	.10389	SYSTEM	
11	PVV-1-II	CHECK OPERATION OF SYSTEM	.99211	SYSTEM	
VT-8 =		4.27616 HRS PER SYSTEM			

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VT-9 REMOVE AND INSTALL AIR-COOLED CONDENSER IN A 25-99 TON OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	VT-6	PUMP DOWN 25-99 TON SYSTEM INTO SEPARATE CYLINDERS	.27949	JOB	
			3.85050	JOB	
2	PHMU-1-9000	REMOVE AND INSTALL SCREW	.14240	JOB	
3	PHMU-1-8021	REMOVE AND INSTALL PANEL	.09800	JOB	
4	PHQ-19-VII	REMOVE AND INSTALL FITTING	.39600	JOB	
5	PHMU-1-8010	PLUG AND UNPLUG PORT OPENINGS	.10480	JOB	
6	PHV-1-IV	PREPARE TO REMOVE CONDENSER	.17830	JOB	
7	PHMU-1-8000	REMOVE AND INSTALL BOLT	.14240	JOB	
8	PHN-10-XII	REMOVE AND INSTALL CONDENSER	.39716	JOB	
9	PHV-1-IV	PUT CONDENSER INTO OPERATION	.17830	JOB	
10	VT-1	CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM	.62145	JOB	
			.94725	JOB	
11	4211	CHECK OPERATION OF SYSTEM	.29200	JOB	
12	PWA-3-II	MATERIAL HANDLING	.20718	JOB	
VT-9 =		9.75530 HRS PER JOB			

VT-10 REMOVE AND INSTALL SHELL AND TUBE WATER COOLED CONDENSER IN A 25-99 TON AIR CONDITIONING SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	VT-4	PUMP SYSTEM DOWN INTO SEPARATE CYLINDERS	.27949	SYSTEM	
			.70206	SYSTEM	
2	PWQ-19-VII	REMOVE AND INSTALL FITTINGS	.71216	SYSTEM	
3	PMMU-1-8010	PLUG AND UNPLUG PORT OPENINGS	.10480	SYSTEM	
4	PMMU-1-8060	REMOVE AND INSTALL BOLT	.28480	SYSTEM	
5	PWV-1-VI	PREPARE TO REMOVE SHELL AND TUBE CONDENSER	.21122	SYSTEM	
6	PWN-10-VII	REMOVE AND INSTALL CONDENSER	.35716	SYSTEM	
7	PWV-1-VII	PUT CONDENSER INTO OPERATION	1.28937	SYSTEM	
8	VT-1	CHARGE AIR CONDITIONING SYSTEM WITH REFRIGERANT AFTER PUMPOWN	1.86435	SYSTEM	
			.94725	SYSTEM	
9	PWG-20-II	DRAIN AND FILL CONDENSER	.38400	SYSTEM	
10	4211	CHECK OPERATION OF SYSTEM	.29200	SYSTEM	
11	PWA-5-II	MATERIAL HANDLING	.31077	SYSTEM	
VT-10 =		7.65543 HRS PER SYSTEM			

VT-11 REMOVE AND INSTALL COOLING (CHILLED WATER) OR HEATING COIL (25-99 TON AIR HANDLING SYSTEM).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-3-R1	REMOVE AND INSTALL ACCESS PANEL	.22392	SYSTEM	
2	PWV-1-VI	PREPARE TO REMOVE UNIT	.21122	SYSTEM	
3	PWQ-19-VII	REMOVE AND INSTALL FITTINGS	.39680	SYSTEM	
4	PMMU-1-8552	REMOVE AND INSTALL BOLTS	.34880	SYSTEM	
5	PWN-10-VII	REMOVE AND INSTALL UNIT	.35716	SYSTEM	
6	PWV-1-VII	PUT UNIT INTO OPERATION	1.28937	SYSTEM	
7	PWV-1-II	CHECK OPERATION OF SYSTEM	.95211	SYSTEM	
8	PWA-5-II	MATERIAL HANDLING	.10399	SYSTEM	
VT-11 =		3.83825 HRS PER SYSTEM			

VT-12 REMOVE AND INSTALL COOLING UNIT (EVAPORATOR) IN A  
25-39 TON AIR HANDLING UNIT--DIRECT EXPANSION  
SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-2-61	REMOVE AND INSTALL ACCESS PANEL	.22392	SYSTEM	
2	VT-3	PUMP DOWN SYSTEM INTO RECEIVER	.39128	SYSTEM	
3	PWC-19-VIC	REMOVE AND INSTALL FITTING	.35605	SYSTEM	
4	PWNU-1-8010	PLUG AND UNPLUG PORT OPENINGS	.10480	SYSTEM	
5	PWV-1-IX	PREPARE TO REMOVE EVAPORATOR	.20137	SYSTEM	
6	PWNU-1-9582	REMOVE AND INSTALL BOLT	.36880	SYSTEM	
7	PWN-10-XII	REMOVE AND INSTALL EVAPORATOR	.35716	SYSTEM	
8	PWV-1-X	PUT EVAPORATOR INTO OPERATION	.53794	SYSTEM	
9	VT-1	CHARGE 25-39 TON AIR CONDITIONING SYSTEM AFTER REPAIR	.62145	SYSTEM	
10	PWV-1-II	CHECK OPERATION OF SYSTEM	.95211	SYSTEM	
11	PAB-5-II	MATERIAL HANDLING	.10359	SYSTEM	

VT-12 = 5.34576 HRS PER SYSTEM

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VT-13 REMOVE AND INSTALL RECEIVER VALVE OR KING VALVE IN  
A OPEN (CENTRAL COMPRESSION) SYSTEM, AVG. 30 TON  
AIR CONDITIONING SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-1-XIII	REMOVE AND INSTALL VALVE OR RECEIVER FLANGES	.58148	SYSTEM	
2	PWN-10-XII	REMOVE AND INSTALL RECEIVER	.17858	SYSTEM	
3	PWV-1-II	CHECK OPERATION OF SYSTEM	.95211	SYSTEM	
4	VT-1	CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM	.62145	SYSTEM	
5	VT-6	PUMP DOWN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM	.27949	SYSTEM	

VT-13 = 3.95929 HRS PER SYSTEM

VT-14            REMOVE AND INSTALL THERMOSTATIC EXPANSION VALVE IN  
A 25 TO 99 TON OPEN (CENTRAL COMPRESSION) AIR  
CONDITIONING SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	VT-3	PUMP DOWN SYSTEM INTO RECEIVER	.39128	SYSTEM	
2	PWQ-19-VII	REMOVE AND INSTALL FITTING	.33412	SYSTEM	
3	PWHU-1-8010	PLUG AND UNPLUG PORT OPENINGS	.19720	SYSTEM	
4	PWV-1-XI	PREPARE TO REMOVE EXPANSION VALVE	.35852	SYSTEM	
5	PWHU-1-8011	REMOVE AND INSTALL EXPANSION VALVE	.07320	SYSTEM	
6	PWV-1-XII	PUT EXPANSION VALVE INTO OPERATION	.23417	SYSTEM	
7	VT-1	CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM	.62149	SYSTEM	
8	4211	CHECK OPERATION OF SYSTEM	.29200	SYSTEM	
9	PWA-5-II	MATERIAL HANDLING	.10399	SYSTEM	

VT-14 = 3.91277 HRS PER SYSTEM

VT-15            REMOVE AND INSTALL STRAINER OR DRYER IN A 25-99  
TON OPEN (CENTRAL COMPRESSION) AIR CONDITIONING  
SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	VT-3	PUMP SYSTEM DOWN INTO RECEIVER	.39128	COMPONENT	
2	PWHU-1-8000	REMOVE AND INSTALL SCREWS	.21360	COMPONENT	
3	PWV-1-XV	PREPARE TO REMOVE DRYER/STRAINER	.34466	COMPONENT	
4	PWHU-1-8011	REMOVE AND INSTALL DRYER/STRAINER	.07320	COMPONENT	
5	PWHU-1-8010	REMOVE AND INSTALL DRYER/STRAINER INSERT	.07800	COMPONENT	
6	PWV-1-XVI	PUT DRYER/STRAINER INTO OPERATION	.26959	COMPONENT	
7	PWA-5-I	MATERIAL HANDLING	.06906	COMPONENT	

VT-15 = 1.63999 HRS PER COMPONENT

VT-16            INSTALL NEW WINDOW AIR CONDITIONER (1/2-2 TONS)  
IN WINDOW WITH RAISABLE SASH.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8023	REMOVE CARDBOARD CONTAINER	.02450	JOB	
2	PWMU-1-8000	REMOVE AND INSTALL SCREWS	.12460	JOB	
3	PWMU-1-8010	REMOVE AND INSTALL PANEL	.02620	JOB	
4	PWN-10-XII	REMOVE AND INSTALL UNIT IN CABINET	.39716	JOB	
5	PWMU-1-8552	REMOVE BOLT FROM CRATE	.04360	JOB	
6	PWMU-1-8003	RAISE AND LOWER WINDOW	.00400	JOB	
7	PWMU-1-8021	INSTALL CABINET IN WINDOW	.02450	JOB	
8	PWMU-1-8552	INSTALL LEVELING ARM	.00720	JOB	
9	PWMU-1-8553	LOOSEN AND TIGHTEN LEVELING SCREW	.03480	JOB	
10	PWMU-1-8100	MEASURE, MARK AND CUT FILLER PANEL	.00202	JOB	
			.05330	JOB	
11	PWMU-1-8010	INSTALL FILLER PANEL	.02620	JOB	
12	PWMU-1-8010	INSTALL WEATHER STRIPPING	.03930	JOB	
13	PWMU-1-8003	INSTALL CAULKING	.01200	JOB	
14	PWMU-1-8010	INSTALL PLUG	.01310	JOB	
15	4211	CHECK OPERATION OF UNIT	.29200	JOB	
16	PWA-3-II	MATERIAL HANDLING	.31077	JOB	

VT-16 = .64732 HRS PER JOB

VT-17            REMOVE WINDOW AIR CONDITIONER (1/2-2 TONS) FROM  
RAISABLE WINDOW.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8000	REMOVE FACE PANEL SCREWS	.07120	JOB	
2	PWMU-1-8010	REMOVE FACE PANEL	.01310	JOB	
3	PWN-10-XII	REMOVE UNIT FROM CABINET	.17898	JOB	
4	PWMU-1-8003	RAISE AND LOWER WINDOW	.00400	JOB	
5	PWMU-1-8010	REMOVE WEATHER STRIPPING	.01310	JOB	
6	PWMU-1-8010	REMOVE FILLER PANEL	.02620	JOB	
7	PWMU-1-8553	LOOSEN LEVELING SCREW	.01740	JOB	
8	PWMU-1-8021	REMOVE CABINET FROM WINDOW	.02450	JOB	
9	PWMU-1-8022	INSTALL UNIT IN CABINET	.10280	JOB	
10	PWMU-1-8010	INSTALL FACE PANEL	.01310	JOB	
11	PWMU-1-8000	INSTALL SCREWS	.07120	JOB	
12	PWA-3-II	MATERIAL HANDLING	.06906	JOB	

VT-17 = .60626 HRS PER JOB

VT-18 REMOVE SOLID BEARING AND INSTALL SPLIT TYPE BEARING ON CENTRIFUGAL (SQUIRREL CAGE) FAN SHAFT.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8000	REMOVE AND INSTALL SCREW	.10680	JOB	
2	PWMU-1-8012	REMOVE AND INSTALL ACCESS PANEL	.03560	JOB	
3	PWMU-1-8552	REMOVE AND INSTALL OIL FILLER TUBE	.04360	JOB	
4	PWMU-1-8000	REMOVE AND INSTALL BOLT	.03560	JOB	
5	PWMU-1-8012	REMOVE AND INSTALL BEARING CAP	.01780	JOB	
6	PWMU-1-8000	LOOSEN AND TIGHTEN BEARING RETAINER BOLT	.01780	JOB	
7	PWMU-1- .011	MOVE BEARING DOWN SHAFT	.03660	JOB	
8	PWMU-1-8000	REMOVE AND INSTALL HOUSING NUTS	.07120	JOB	
9	PWMU-1-8005	REMOVE AND INSTALL HOUSING BOLTS	.01600	JOB	
10	PWMU-1-8012	REMOVE AND INSTALL BEARING HOUSING	.01780	JOB	
11	PWEA-4-I	BURN HOUSING WITH TORCH	.00960	JOB	
			.06035	JOB	
12	PWMU-1-8000	REMOVE AND INSTALL BEARING NUTS	.07120	JOB	
13	PWMU-1-9005	REMOVE AND INSTALL BEARING BOLTS	.01600	JOB	
14	PWEA-4-II	BURN HOLES FOR HOUSING BOLTS	.10480	JOB	
			.05380	JOB	
15	PWN-3-VII	FILL OIL FILLER TUBE WITH OIL	.07887	JOB	
			.28260	JOB	
16	6208	CHECK OPERATION FOR BEARING	.06200	JOB	
17	PWA-5-I	MATERIAL HANDLING	.13512	JOB	
VT-18 =		1.26314 HRS PER JOB			

VT-19 DRAIN, REMOVE AND INSTALL END PLATES, PUNCH TUBES, AND FILL ABSORBER OR GENERATOR IN 100 TON ABSORPTION SYSTEM-USE LADDER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWQ-19-VIII	REMOVE AND INSTALL PIPE FITTINGS	.54963	JOB	
2	PWG-20-II	DRAIN AND FILL TUBES	.76000	JOB	
3	PWMU-1-8553	REMOVE AND INSTALL NUT	1.11360	JOB	
4	PWN-10-XII	REMOVE AND INSTALL END PLATES	.71432	JOB	
5	PWV-13-II	PUNCH 220 TUBES UP TO 14" LONG AND 1" O.D.	.02603	JOB	
			2.90400	JOB	
6	PWN-19-II	CUT GASKET * AVG. OF 2 GASKETS	.01564	JOB	
			.18503	JOB	
7	PWN-19-K5	PUNCH HOLES IN GASKET	.00201	JOB	
			.23668	JOB	
8	PWMU-1-8010	INSTALL GASKET	.02620	JOB	
9	PWA-5-II	MATERIAL HANDLING	.41436	JOB	
10	PWMU-1-8052	GET, ASCEND, DESCEND, AND ASIDE LADDER	.04160	JOB	
VT-19 =		6.98584 HRS PER JOB			

VT-20 DRAIN, REMOVE AND INSTALL END PLATES; PUNCH TUBES, AND FILL ABSORBER OR GENERATOR IN 300 TON ABSORPTION SYSTEM. USE LADDER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWQ-19-VIII	REMOVE AND INSTALL PIPE FITTING	.54868	JOB	
2	PWQ-20-II	DRAIN AND FILL TUBES	1.90003	JOB	
3	PWNU-1-8592	REMOVE AND INSTALL NUT	1.39920	JOB	
4	PWN-10-XV	REMOVE AND INSTALL END PLATES	1.36660	JOB	
5	PWV-13-II	PUNCH TUBES UP TO 25" LONG AND 1" O.D.	.02408	JOB	
			5.20000	JOB	
6	PWN-19-II	CUT AVG. OF 2 GASKETS	.01964	JOB	
			.18508	JOB	
7	PWN-19-K5	PUNCH 32 HOLES IN GASKET	.00201	JOB	
			.23648	JOB	
8	PWNU-1-8010	INSTALL GASKET	.02620	JOB	
9	PWA-5-II	MATERIAL HANDLING	.41436	JOB	
10	PWNU-1-8052	GET, ASCEND, DESCEND, AND ASIDE LADDER	.06140	JOB	

VT-20 = 11.43553 HRS PER JOB

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VT-21 REMOVE AND INSTALL DISPOSABLE TYPE FILTER IN INDIVIDUAL OVERHEAD UNIT-- LADDER USED.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL NUT OR SCREW	.07120	JOB	
2	PWNU-1-8012	REMOVE AND INSTALL PANEL	.01780	JOB	
3	PWNU-1-8012	REMOVE AND INSTALL FILTER	.01780	JOB	
4	PWA-5-II	MATERIAL HANDLING	.10389	JOB	
5	PWNU-1-8052	GET, ASCEND, DESCEND, AND ASIDE LADDER	.02070	JOB	

VT-21 = .23109 HRS PER JOB

VT-22 REMOVE AND INSTALL A SET OF THREE BELTS ON A  
COMPRESSOR IN A OPEN (CENTRAL COMPRESSION) AIR  
CONDITIONING SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	2388	TURN POWER ON AND OFF	.00250	SYSTEM	
2	PWMU-1-8000	REMOVE AND INSTALL SCREWS ON BELT GUARD	.07120	SYSTEM	
3	PWMU-1-8021	REMOVE AND INSTALL BELT GUARD	.06900	SYSTEM	
4	PWMU-1-8553	LOOSEN AND TIGHTEN MOTOR BASE BOLTS	.06900	SYSTEM	
5	PWMU-1-8553	LOOSEN AND TIGHTEN ADJUSTING SCREW	.05220	SYSTEM	
6	PWMU-1-8011	PRY MOTOR TO LOOSEN AND TIGHTEN	.07320	SYSTEM	
7	PWMU-1-8021	REMOVE AND INSTALL BELTS	.14700	SYSTEM	
8	4209	CHECK OPERATION	.16700	SYSTEM	
9	PWA-5-I	MATERIAL HANDLING	.06906	SYSTEM	

VT-22 = .70086 HRS PER SYSTEM

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VT-23 REMOVE AND INSTALL FLOAT LINKAGE IN WATER TOWER  
OR CONDENSER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8000	REMOVE AND INSTALL SCREW	.14240	JOB	
2	PWMU-1-8011	REMOVE AND INSTALL PANEL	.07320	JOB	
3	PWMU-1-8013	REMOVE AND INSTALL FLOAT ASSEMBLY	.04620	JOB	
4	3601	ADJUST FLOAT LINKAGE	.08000	JOB	
5	4209	CHECK OPERATION	.16700	JOB	

VT-23 = .50880 HRS PER JOB

VT-24                   INSTALL NEW WINDOW AIR CONDITIONING UNIT (1/2 TO 3 TONS) IN FIXED STEEL SASH WINDOW.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8021	REMOVE CABINBOARD CONTAINER	.02490	JOB	
2	PWNU-1-8000	REMOVE AND INSTALL SCREWS	.12460	JOB	
3	PWNU-1-8010	REMOVE AND INSTALL PANEL	.02620	JOB	
4	PWN-10-XII	REMOVE AND INSTALL UNIT IN CABINET	.35716	JOB	
5	PWEA-92-I	LAYOUT AREA TO BE REMOVED FROM WINDOW	.20040	JOB	
6	PWNU-1-8013	REMOVE WINDOW PANES	.13860	JOB	
7	PWEA-4-III	CUT FRAME WITH TORCH	.00960	JOB	
8	PWNU-1-8552	REMOVE BOLT FROM CRATE	.04360	JOB	
9	PWNU-1-8000	INSTALL MOUNTING FRAME	.03560	JOB	
10	PWNU-1-8021	INSTALL CABINET IN WINDOW	.02490	JOB	
11	PWNU-1-8552	INSTALL LEVELING ARM	.00720	JOB	
12	PWNU-1-8553	LOOSEN AND TIGHTEN LEVELING SCREW	.03480	JOB	
13	PWNU-1-8100	MEASURE, MARK AND CUT FILLER PANEL	.00202	JOB	
			.07993	JOB	
14	PWNU-1-8010	INSTALL FILLER PANEL	.03930	JOB	
15	PWNU-1-8010	INSTALL WEATHER STRIPPING	.03930	JOB	
16	PWNU-1-8005	INSTALL CAULKING	.01200	JOB	
17	PWNU-1-8010	INSTALL PLUG	.01310	JOB	
18	PWNU-1-8000	SECURE PANELS TO WINDOW	.08900	JOB	
19	4211	CHECK OPERATION OF UNIT	.58400	JOB	
20	5607	ADJUST UNIT	.10200	JOB	
21	PWA-9-I	MATERIAL HANDLING	.13812	JOB	

VT-24 = 2.23044 HRS PER JOB

VT-25

CLEAN SHELL AND TUBE WATER COOLED CONDENSER OR  
CHILLED WATER EVAPORATOR (100 TO 200 TON SYSTEM).  
--INCLUDES DRAIN AND FILL; REMOVE AND INSTALL END  
PLATES; PUNCH CLEAN TUBES; FABRICATE AND INSTALL  
GASKETS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWQ-19-VIII	REMOVE AND INSTALL FILLING PIPE	.34868	JOB	
2	PWQ-20-II	DRAIN AND FILL TUBES	.38000	JOB	
3	PMMU-1-8552	REMOVE AND INSTALL NUT	1.00280	JOB	
4	PMM-10-XII	REMOVE AND INSTALL PLATE COVER	.71432	JOB	
5	PWV-13-I	PUNCH CLEAN TUBE UP TO 16" LONG, UP TO 1" O.D.	.02408	JOB	
			.76800	JOB	
6	PWV-13-I	DRY TUBE WITH RAG	.02408	JOB	
			.74800	JOB	
7	PMM-19-II	CUT 2 GASKETS UP TO 2 SQ. FT. EACH	.01964	JOB	
			.18908	JCB	
8	PMM-19-K3	MARK AND PUNCH 32 HOLES IN GASKET	.00201	JOB	
			.23648	JOB	
9	PMMU-1-8010	INSTALL GASKETS	.02620	JOB	
10	PWB-3-II	MATERIAL HANDLING	.61436	JOB	
VT-25		= .06972 HRS PER JOB			

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VT-26

SEASONAL (FALL) OPERATION--SHUT DOWN AIR HANDLING  
UNIT; COOLING ONLY.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.28480	JOB	
2	PMMU-1-8012	REMOVE AND INSTALL PANEL	.03560	JOB	
3	PWG-40-XI	SENSORY INSPECT BEARINGS	.08420	JOB	
4	PWG-40-I	GREASE BEARINGS	.03025	JOB	
5	PWG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	
6	S603	TURN SWITCH OFF	.02100	JOB	
VT-26		= .46960 HRS PER JOB			

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VT-27

SEASONAL (FALL) OPERATION--SHUT DOWN COMPRESSOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-1-VIII	PREPARE AND PUMP DOWN SYSTEM INTO RECEIVER	.40980	JOB	
2	6205	CHECK SYSTEM FOR LEAKS AND NOTE	.06300	JOB	
3	S603	TURN SWITCH OFF	.02100	JOB	
4	PWG-40-XII	FILL OUT INSPECTORS REPORT	.01185	JOB	
VT-27		= .49685 HRS PER JOB			

VT-20            CLEAN SHELL AND TUBE CONDENSER OR CHILLED WATER  
EVAPORATOR (300 TO 600 TON SYSTEM).  
-INCLUDES DRAIN AND FILL; REMOVE AND INSTALL END  
PLATES; PUNCH AND CLEAN TUBES; FABRICATE AND  
INSTALL GASKETS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PUG-19-V121	REMOVE AND INSTALL PIPE FITTINGS	.54888	JOB	
2	PUG-10-II	DRAIN AND FILL TUBES	.68400	JOB	
3	PUMU-1-8592	REMOVE AND INSTALL NUT	1.13360	JOB	
4	PUN-10-II2	REMOVE AND INSTALL COVER PLATE	.71432	JOB	
5	PUV-13-II	PUNCH CLEAN TUBE UP TO 25" LONG, UP TO 1" O.D.	.02609	JOB	
			2.31000	JOB	
6	PUV-13-II	CLEAN TUBE WITH RAG	.02600	JOB	
			2.31000	JOB	
7	PUN-19-II	CUT 2 GASKETS OVER 2 SQ. FT.	.01964	JOB	
			.18308	JOB	
8	PUN-19-4S	MARK AND PUNCH 32 HOLES IN GASKET	.00201	JOB	
			.23348	JOB	
9	PUMU-1-8010	INSTALL GASKET	.02620	JOB	
10	PWA-9-II	MATERIAL HANDLING	.41436	JOB	

VT-20 = .652852 HRS PER JOB

VT-20            SEASONAL (FALL) OPERATION--SHUT DOWN EVAPORATIVE  
CONDENSER OR METAL COOLING TOWER (100 TO 199 TON  
AIR CONDITIONING SYSTEM)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PUMU-1-8009	REMOVE AND INSTALL SCREEN	.21368	JOB	
2	PUMU-1-8011	REMOVE AND INSTALL PANEL	.16640	JOB	
3	PUG-40-II	SENSORY INSPECT BEARINGS	.08420	JOB	
4	2140	DRAIN WATER	.49000	JOB	
5	5003	TURN SWITCH OFF	.02300	JOB	
6	PUG-40-II2	FILL OUT INSPECTOR REPORT	.01198	JOB	

VT-20 = .96703 HRS PER JOB

VT-30            SEASONAL (FALL) OPERATION--SHUT DOWN EVAPORATOR,  
CONDENSER OR METAL COOLING TOWER (3 TO 99 TON  
SYSTEM).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREWS	.10680	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL PANEL	.07320	JOB	
3	PNG-40-XI	SENSORY INSPECT BEARINGS	.08420	JOB	
4	2148	DRAIN WATER	.07350	JOB	
5	PNG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	
6	5603	TURN SWITCH OFF	.02100	JOB	
VT-30 =		.37245 HRS PER JOB			

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VT-31            SEASONAL (FALL) OPERATION--SHUT DOWN AIR COOLED  
CONDENSER PER PAN ASSEMBLY.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.14240	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL PANEL	.07320	JOB	
3	PNG-40-XI	SENSORY INSPECT BEARINGS	.08420	JOB	
4	PNG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	
5	5603	TURN OFF SWITCH	.02100	JOB	
VT-31 =		.33455 HRS PER JOB			

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VT-32            SEASONAL (FALL) OPERATION--SHUT DOWN WOOD COOLING  
TOWER (200-299 TON) OR METAL COOLING TOWER (100-  
199 TON).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREWS	.28480	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL SCREEN	.29280	JOB	
3	PNG-40-XI	SENSORY INSPECT BEARINGS AND GEAR BOXES	.30520	JOB	
4	PWV-2-IV	PREPARE TOWER TO DRAIN	.08732	JOB	
5	5603	TURN OFF POWER	.02100	JOB	
6	PNG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	
VT-32 =		1.28687 HRS PER JOB			

VT-33            SEASONAL (FALL) OPERATION--SHUT DOWN WOOD COOLING  
TOWER (25-199 TON) OR METAL COOLING TOWER  
(3-99 TON).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNUU-1-8000	REMOVE AND INSTALL SCREW	.14240	JOB	
2	PNUU-1-8011	REMOVE AND INSTALL SCREEN	.14840	JOB	
3	PNG-40-XI	SENSORY INSPECT BEARING AND GEAR BOXES	.29260	JOB	
4	PWV-2-IV	PREPARE TOWER TO DRAIN	.08732	JOB	
5	S603	TURN OFF POWER	.02100	JOB	
6	PNG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	
VT-33	=	.66347 HRS PER JOB			

VT-34            SEASONAL (FALL) OPERATION--SHUT DOWN PACKAGE UNIT  
(10-49 TON).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNUU-1-8000	REMOVE AND INSTALL SCREW	.10680	JOB	
2	PNUU-1-8011	REMOVE AND INSTALL PANEL	.07320	JOB	
3	PWV-1-VIII	PREPARE AND RUN COMPRESSOR TO PUMP DOWN INTO RECEIVER	.40080	JOB	
4	PNG-40-XI	SENSORY INSPECT BEARINGS	.12630	JOB	
5	S603	TURN POWER OFF	.02100	JOB	
6	PNG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	
VT-34	=	.74185 HRS PER JOB			

VT-35            SEASONAL (FALL) OPERATION--SHUT DOWN WINDOW AIR  
CONDITIONING UNIT

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3842	WALK AROUND WORK AREA TO DIFFERENT LOCATION	.01500	JOB	
2	2981	LOCATE UNIT IN COMPARTMENT AND VISUALLY INSPECT	.00464	JOB	
3	2389	TURN OFF SWITCH	.00103	JOB	
4	2239	UNPLUG UNIT FROM POWER SOURCE	.00099	JOB	
5	2640	TIE UP ELECTRICAL CORD	.00185	JOB	
6	PNUU-1-8032	INSTALL, ASCEND, DESCEND AND REMOVE STEP LADDER	.02070	JOB	
7	5523	OBTAIN AND ASIDE COVER AND ROLL OF TAPE	.01686	JOB	
8	PNUU-1-8012	PLACE COVER OVER UNIT	.00090	JOB	
9	4818	TAPE EDGES OF COVER	.10450	JOB	
10	PNG-40-XII	FILL OUT RECORD SHEET	.01185	JOB	
VT-35	=	.19432 HRS PER JOB			

VT-36            RECURRING MAINTENANCE--WINDOW AIR CONDITIONING UNIT

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.08900	JOB	
2	PWNU-1-8021	REMOVE AND INSTALL PANEL	.04900	JOB	
3	PWG-40-XI	SENSORY INSPECT BEARINGS	.08420	JOB	
4	PWNU-1-9010	REMOVE AND INSTALL DISPOSABLE FILTER	.01310	JOB	
5	PWG-40-XII	FILL OUT INSPECTION REPORT	.01185	JOB	

VT-36 = .24715 HRS PER JOB

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VT-37            RECURRING MAINTENANCE--PACKAGE-TYPE AIR CONDITIONING SYSTEM (10-49 TON).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.21360	JOB	
2	PWNU-1-8021	REMOVE AND INSTALL PANEL	.14640	JOB	
3	PWG-40-I	GREASE BLOWER BEARING FITTINGS	.02420	JOB	
4	PWG-40-II	LUBRICATE OIL CUP	.03916	JOB	
5	PWG-40-X	SENSORY INSPECT MOTOR	.02193	JOB	
6	PWG-40-XI	SENSORY INSPECT BLOWER	.04210	JOB	
7	PWNU-1-8028	WIPE COMPRESSOR AND MOTOR	.16880	JOB	
8	PWNU-1-8032	INSPECT SIGHT GLASS	.00790	JOB	
9	4210	INSPECT FOR LEAKS	.22300	JOB	
10	PWNU-1-8021	REMOVE AND INSTALL DISPOSABLE FILTER	.09800	JOB	
11	5607	ADJUST FAN ASSEMBLY MOTOR PULLEY	.10200	JOB	
12	PWN-3-VII	ADD OIL TO CRANKCASE	.07887	JOB	
			.02896	JOB	
13	PWG-40-XIII	FILL OUT INSPECTION REPORT	.01375	JOB	

VT-37 = 1.20667 HRS PER JOB

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VT-38            RECURRING MAINTENANCE--AIR HANDLING UNIT(3-26 TON)  
--INCLUDES INSPECT, LUBRICATE AND ADJUSTMENT

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.28480	JOB	
2	PWNU-1-8021	REMOVE AND INSTALL PANEL	.03560	JOB	
3	PWG-40-XI	SENSORY INSPECTION FAN MOTOR	.08420	JOB	
4	PWG-40-I	GREASE BEARINGS	.02420	JOB	
5	5604	ADJUST BELT TENSION	.07100	JOB	
6	PWNU-1-8010	REMOVE AND INSTALL DISPOSABLE FILTER	.09240	JOB	
7	PWG-40-XIII	FILL OUT INSPECTION REPORT	.01375	JOB	

VT-38 = .58395 HRS PER JOB

VT-39            RECURRING MAINTENANCE--AIR-COOLED CONDENSER PER  
PAN ASSEMBLY.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.24920	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL PANEL	.14640	JOB	
3	PNG-40-I	LUBRICATE BEARINGS	.02420	JOB	
4	S607	ADJUST BELT TENSION	.10200	JOB	
5	PNG-40-XI	SENSORY INSPECT PAN AND MOTOR	.08420	JOB	
6	PNG-40-XII	FILL OUT INSPECTOR REPORT	.01183	JOB	

VT-39 = .61783 HRS PER JOB

VT-40            RECURRING MAINTENANCE--EVAPORATIVE COOLER OR METAL  
COOLING TOWER (3-24 TON).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.23360	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL PANEL	.14640	JOB	
3	PNG-40-I	LUBRICATE BEARINGS, PAN, MOTORS, AND PUMP	.03630	JOB	
4	S607	ADJUST BELT TENSION	.10200	JOB	
5	S601	ADJUST FLOAT	.04080	JOB	
6	PNG-40-XI	SENSORY INSPECT BEARINGS	.12630	JOB	
7	PNG-40-XII	FILL OUT INSPECTOR REPORT	.01375	JOB	

VT-40 = .67835 HRS PER JOB

VT-61            RECURRING MAINTENANCE--AIR OR WATER-COOLED PACKAGE  
TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM  
(3-9 TON).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.21360	JOB	
2	PWNU-1-8021	REMOVE AND INSTALL PANEL	.09800	JOB	
3	PWG-40-I	GREASE BLOWER BEARING FITTING	.01815	JOB	
4	PWG-40-II	LUBRICATE OIL CUP	.02364	JOB	
5	PWG-40-X	SENSORY INSPECT FAN	.02193	JOB	
6	PWG-40-XI	SENSORY INSPECT BLOWER	.04210	JOB	
7	PWNU-1-8028	WIPE MOTOR AND CONDENSER	.16890	JOB	
8	PWNU-1-8032	INSPECT SIGHT GLASS	.00790	JOB	
9	4210	INSPECT FOR LEAKS	.07500	JOB	
10	PWNU-1-8010	REMOVE AND INSTALL DISPOSABLE FILTER	.05240	JOB	
11	PWG-40-XIII	FILL OUT INSPECTION REPORT	.01375	JOB	

VT-61 = .73507 HRS PER JOB

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VT-62            RECURRING MAINTENANCE--COMPRESSOR--OPEN (CENTRAL  
COMPRESSION) AIR CONDITIONING SYSTEM. (2-24 TON  
SYSTEM)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8023	WIPE COMPRESSOR AND MOTOR	.16690	JOB	
2	5607	ADJUST BELT TENSION	.10200	JOB	
3	PWNU-1-8032	INSPECT SIGHT GLASS AND GAGES	.02370	JOB	
4	PWG-40-I	LUBRICATE BEARINGS	.01210	JOB	
5	PWN-3-VII	ADD OIL	.07887	JOB	
			.01448	JOB	
6	4210	INSPECT FOR LEAKS	.07500	JOB	
7	4211	CHECK FOR PROPER OPERATION	.29200	JOB	
8	PWG-40-XIII	FILL OUT INSPECTION REPORT	.01375	JOB	

VT-62 = .79070 HRS PER JOB

VT-43            CLEAN AND LUBRICATE WINDOW AIR CONDITIONING UNIT.  
--INCLUDES REMOVE AND INSTALL PANEL; CLEAN INSIDE  
CABINET; LUBRICATE BEARING; INSPECT FAN AND  
BLOWERS; REPLACE DISPOSABLE FILTER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.08900	JOB	
2	PWNU-1-8021	REMOVE AND INSTALL PANEL	.04900	JOB	
3	PWNU-1-8022	PULL UNIT PARTIALLY INSIDE WINDOW AND SLIP BACK	.39716	JOB	
4	PWNU-1-8020	CLEAN UNIT INSIDE CABINET	.08640	JOB	
5	PWG-60-1	GREASE BLOWER BEARING FITTING	.01210	JOB	
6	PWG-60-13	LUBRICATE OIL CUP	.02346	JOB	
7	PWG-60-2	SENSORY INSPECT FAN	.07193	JOB	
8	PWG-60-22	SENSORY INSPECT BLOWER	.04220	JOB	
9	PWNU-1-8010	REMOVE AND INSTALL DISPOSABLE FILTER	.02620	JOB	
10	PWA-3-22	MATERIAL HANDLING	.20716	JOB	

VT-43 = .91251 HRS PER JOB

VT-44            RECURRING MAINTENANCE--COMPRESSOR--OPEN (CENTRAL  
COMPRESSION) AIR CONDITIONING SYSTEM (25 TON AND  
OVER SYSTEM)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWNU-1-8020	WIPE COMPRESSOR AND MOTOR	.16800	JOB	
2	8608	CHECK MOTOR ALIGNMENT AND ADJUST	.18800	JOB	
3	PWNU-1-8032	INSPECT SIGHT GLASS AND GAUGES	.03100	JOB	
4	PWG-60-1	LUBRICATE BEARINGS	.03630	JOB	
5	PWN-3-VII	ADD OIL	.07887	JOB	
6	PWG-20-22	DRAIN AIR TANK	.01820	JOB	
7	4210	INSPECT FOR LEAKS	.15000	JOB	
8	4211	CHECK FOR PROPER OPERATION	.29200	JOB	
9	PWG-60-XIII	FILL OUT INSPECTOR REPORT	.01373	JOB	

VT-44 = .98900 HRS PER JOB

VT-45

RECURRING MAINTENANCE--EVAPORATIVE CONDENSER OR  
METAL COOLING TOWER (25 TON AND OVER AIR CONDIT-  
IONING SYSTEM)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8000	REMOVE AND INSTALL SCREW	.32040	JOB	
2	PWMU-1-8011	REMOVE AND INSTALL PANEL	.29280	JOB	
3	PWG-40-I	LUBRICATE BEARINGS, FAN, MOTOR AND PUMP	.07260	JOB	
4	5607	ADJUST BELT TENSION	.10200	JOB	
5	5601	ADJUST FLOAT	.04000	JOB	
6	PWG-40-XI	SENSORY INSPECT BEARINGS	.25260	JOB	
7	PWG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	

VT-45 = 1.09615 HRS PER JOB

VT-46

CLEAN, INSPECT, ADJUST AND LUBRICATE PACKAGE-TYPE/  
SELF-CONTAINED AIR CONDITIONING SYSTEM (3-40 TON)  
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN  
INTERIOR AND CENTRIFUGAL (SQUIRREL CAGE) FANS;  
INSPECT; MAKE ADJUSTMENTS; LUBRICATE MOVING PARTS;  
AND CHARGE SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8000	REMOVE AND INSTALL SCREW	.21360	JOB	
2	PWMU-1-8011	REMOVE AND INSTALL PANEL	.14840	JOB	
3	PWG-40-I	LUBRICATE BLOWER BEARINGS	.02420	JOB	
4	PWG-40-II	LUBRICATE OIL CUP	.03516	JOB	
5	PWG-40-X	SENSORY INSPECT PUMP	.02193	JOB	
6	PWG-40-XI	SENSORY INSPECT BLOWER	.04210	JOB	
7	PWG-40-XII	CLEAN SQUIRREL CAGE FAN	.25082	JOB	
8	PWMU-1-8028	WIPE MOTOR AND COMPRESSOR	.16980	JOB	
9	PWMU-1-8031	BRUSH COOLING COILS	.27400	JOB	
10	PWMU-1-8032	INSPECT SIGHT GLASS	.00790	JOB	
11	4210	INSPECT FOR LEAKS	.22500	JOB	
12	PWMU-1-8021	REMOVE AND INSTALL DISPOSABLE FILTER	.09800	JOB	
13	PWMU-1-8011	REMOVE AND INSTALL BELT	.07320	JOB	
14	5607	ADJUST PULLEY	.10200	JOB	
15	VT-1	CHARGE PACKAGE-TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM REPAIR	.62145	JOB	
16	VT-2	PUMP DOWN COMPRESSOR	.38220	JOB	
17	PWH-2-V	ADD OIL TO CRANKCASE	.02265	JOB	
			.02731	JOB	
18	PWMU-1-8031	CLEAN INTERIOR CABINET BY SCRAPPING AND WIPING	.27400	JOB	

VT-46 = 3.39761 HRS PER JOB

VT-47 RECURRING MAINTENANCE--WOOD COOLING TOWER (25-99  
TON AIR CONDITIONING SYSTEM)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWHU-1-8000	REMOVE AND INSTALL SCREEN	.14240	JOB	
2	PWG-40-XII	REMOVE AND INSTALL SCREEN	.14660	JOB	
3	PWG-40-XV	CLEAN FAN	.04911	JOB	
4	PWG-34-II	CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR	.04810	JOB	
5	PWG-40-VI	ADD OIL TO GEAR BOX	.01428	JOB	
6	PWHU-1-8000	REMOVE AND INSTALL GEAR BOX PLUG	.01780	JOB	
7	S607	ADJUST BELT TENSION	.10200	JOB	
8	PWG-40-I	LUBRICATE FAN AND PUMP	.03630	JOB	
9	PWG-40-XII	SENSORY INSPECT BEARINGS	.12630	JOB	
10	S601	ADJUST FLOAT ASSEMBLY	.06000	JOB	
11	PWG-40-XIII	FILL OUT INSPECTOR REPORT	.01375	JOB	

VT-47 = .73644 HRS PER JOB

VT-48 RECURRING MAINTENANCE--WOOD COOLING TOWER (500-999  
TON AIR CONDITIONING SYSTEM)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWHU-1-8000	REMOVE AND INSTALL SCREEN	.36960	JOB	
2	PWHU-1-8011	REMOVE AND INSTALL SCREEN	.29280	JOB	
3	PWG-40-XV	CLEAN FAN	.19644	JOB	
4	PWG-34-II	CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR	.19240	JOB	
5	PWHU-1-8000	REMOVE AND INSTALL GEAR BOX PLUG	.07120	JOB	
6	PWG-40-VI	ADD OIL TO GEAR BOX	.02856	JOB	
7	S607	ADJUST BELT TENSION	.40800	JOB	
8	PWG-40-I	LUBRICATE BEARINGS	.07260	JOB	
9	PWG-40-XII	SENSORY INSPECT BEARINGS	.29260	JOB	
10	S601	ADJUST FLOAT ASSEMBLY	.08000	JOB	
11	PWG-40-XIII	FILL OUT INSPECTOR REPORT	.05909	JOB	

VT-48 = 3.21919 HRS PER JOB

VT-49            CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (3-24 TON).  
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING COILS AND AIR PLENUM; INSPECT; MAKE ADJUSTMENTS; LUBRICATE BEARINGS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.28480	JOB	
2	PWNU-1-8012	REMOVE AND INSTALL PANEL	.03560	JOB	
3	PWG-40-XI	SENSORY INSPECTION SQUIRREL CAGE FAN AND MOTOR	.08420	JOB	
4	PWG-40-XXIV	CLEAN SQUIRREL CAGE FAN	.38763	JOB	
5	PWNU-1-8031	CLEAN COOLING COILS	.27400	JOB	
6	PWV-2-I	CLEAN AIR PLENUM	.18680	JOB	
			.02400	JOB	
7	PWG-40-I	GREASE FAN BEARINGS	.02420	JOB	
8	5674	ADJUST FAN MOTOR PULLEYS	.07100	JOB	

VT-49 = 1.37223 HRS PER JOB

VT-50            CLEAN, INSPECT, ADJUST, LUBRICATE AND CHANGE OIL IN COMPRESSOR IN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM (3-24 TON)--INCLUDES WIPE COMPRESSOR AND MOTOR; INSPECT FOR LEAKS AND PROPER OPERATION; ADJUST BELTS; LUBRICATE MOTOR BEARINGS; DRAIN AND FILL CRANKCASE; AND CHARGE SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V36
1	PWNU-1-8028	WIPE COMPRESSOR AND MOTOR	.16980	JOB	
2	PWNU-1-8010	REMOVE AND INSTALL BELT	.02620	JOB	
3	5607	ADJUST BELT TENSION AND ALIGNMENT	.10200	JOB	
4	PWN-3-VII	DRAIN OIL FROM CRANKCASE	.07887	JOB	
			.01443	JOB	
5	PWN-3-VII	FILL CRANKCASE WITH OIL	.07887	JOB	
			.01448	JOB	
6	VT-2	PREPARE AND RUN TO PUMP DOWN	.38220	JOB	
7	PWNU-1-8032	INSPECT SIGHT GLASS	.00790	JOB	
8	VT-1	CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM	.62145	JOB	
			.03789	JOB	
9	4210	INSPECT FOR LEAKS	.07500	JOB	
10	PWG-40-I	LUBRICATE MOTOR BEARINGS	.01210	JOB	
11	4211	CHECK FOR PROPER OPERATION	.29200	JOB	

VT-50 = 1.91226 HRS PER JOB

VT-31            CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING  
UNIT (3-24 TON).  
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN  
CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING AND HEAT-  
ING COILS AND AIR PLENUM; INSPECT FAN AND MOTORS;  
ADJUST PULLEYS; LUBRICATE FAN BEARINGS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.28480	JOB	
2	PWPU-1-8013	REMOVE AND INSTALL PANEL	.03960	JOB	
3	PWG-40-XI	SENSORY INSPECTION SQUIRREL CAGE AND FAN AND MOTOR	.08420	JOB	
4	PWG-40-XXIV	CLEAN SQUIRREL CAGE FAN	.30763	JOB	
5	PWNU-1-8031	CLEAN COOLING AND HEATING COILS	.34800	JOB	
6	PWV-2-I	CLEAN AIR PLENUM (CLEAN AVG. OF 40 SQ. FT.)	.18680	JOB	
7	PWG-40-I	GREASE FAN BEARINGS	.02420	JOB	
8	9607	ADJUST FAN MOTOR PULLEYS	.10200	JOB	

VT-31 = 1.67722 HRS PER JOB

VT-32            CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING  
UNIT (25-99 TON).  
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN  
CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING COILS AND  
PLENUM; INSPECT FAN AND MOTORS; ADJUST PULLEYS;  
LUBRICATE FAN BEARINGS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.42720	JOB	
2	PWPU-1-8013	REMOVE AND INSTALL PANEL	.13860	JOB	
3	PWG-40-XI	SENSORY INSPECT SQUIRREL CAGE FAN AND MOTOR	.08420	JOB	
4	PWG-40-XXIV	CLEAN SQUIRREL CAGE FAN	.77526	JOB	
5	PWNU-1-8031	CLEAN COOLING COILS	1.23300	JOB	
6	PWV-2-I	CLEAN AIR PLENUM (AVG. OF 180 SQ. FT.)	.18680	JOB	
7	PWG-40-I	GREASE FAN BEARINGS	.03025	JOB	
8	9607	ADJUST FAN MOTOR PULLEY	.10200	JOB	

VT-32 = 3.08531 HRS PER JOB

VT-53

CLEAN, INSPECT, ADJUST, LUBRICATE AND CHANGE OIL IN COMPRESSOR IN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM (OVER 100 TON)--INCLUDES WIPE COMPRESSOR AND MOTOR; INSPECT FOR LEAKS AND SAFETY DEVICES; ADJUST MOTOR ALIGNMENT; LUBRICATE MOTOR BEARINGS; DRAIN AND FILL CRANKCASE; CHANGE SYSTEMS AND REMOVE AND INSTALL DRYER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8028	WIPE COMPRESSOR AND MOTOR	.16880	JOB	
2	5608	CHECK AND ADJUST MOTOR ALIGNMENT COUPLINGS	.18800	JOB	
3	PHG-40-I	LUBRICATE MOTOR AND COUPLING	.02420	JOB	
4	PMM-3-VII	DRAIN OIL FROM CRANKCASE	.07887	JOB	
5	PMM-3-V	FILL CRANKCASE WITH OIL	.02265	JOB	
6	VT-2	PREPARE AND RUN TO PUMP DOWN	.38220	JOB	
7	PMMU-1-8032	INSPECT SIGHT GLASS	.01580	JOB	
8	VT-1	CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM REPAIR	.62145	JOB	
9	4210	CHECK FOR LEAKS	.15000	JOB	
10	4207	CHECK SAFETY DEVICES	.12600	JOB	
11	PHQ-20-II	DRAIN WATER FROM AIR TANK	.01520	JOB	
12	PHG-40-I	LUBRICATE AIR COMPRESSOR	.01210	JOB	
13	VT-15	REMOVE AND INSTALL DRYER	1.63999	JOB	
VT-53 = 5.42334 HRS PER JOB					

VT-54	CLEAN, INSPECT, ADJUST AND LUBRICATE WOOD COOLING TOWER (25-99 TON). --INCLUDES REMOVE AND INSTALL PANELS; CLEAN INSIDE TOWER AND COMPONENTS WITH WATER HOSE, BRUSH AND/OR CLOTH; INSPECT FAN AND MOTORS; ADJUST MOTOR AND PLATINUM LUBRICATE PAN, MOTOR AND WATER PUMP.			
NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS V38
1	PNUU-1-8000	REMOVE AND INSTALL SCREEN	.14240	JOB
2	PNUU-1-8011	REMOVE AND INSTALL PANEL	.14660	JOB
3	PNUU-1-8012	REMOVE AND INSTALL SLAT	.20480	JOB
4	PNUU-1-8006	TIGHTEN PLATINUM NUT	.05360	JOB
5	PHV-2-I	CLEAN INSIDE TOWER WITH WATER HOSE	.18680	JOB
			.13200	JOB
6	PHV-2-II	CLEAN INSIDE TOWER BY SCRAPING, BRUSHING AND WIPE	.02186	JOB
			.67848	JOB
7	PHG-40-IV	CLEAN PAN	.04911	JOB
8	PHG-40-I	LUBRICATE PAN	.01210	JOB
9	PHG-36-II	CLEAN, LUBRICATE AND ADJUST MOTOR	.04810	JOB
10	PNUU-1-8013	REMOVE AND INSTALL BELT	.07320	JOB
11	PNUU-1-8028	CLEAN WATER PUMP	.06440	JOB
12	PHG-40-I	LUBRICATE WATER PUMP	.01210	JOB
13	PNUU-1-8013	REMOVE AND INSTALL PLATINUM	.04620	JOB
14	PNUU-1-8026	CLEAN PLATINUM	.01640	JOB
15	S601	ADJUST PLATINUM	.04000	JOB
16	PHV-2-IV	PREPARE TO CRATE OR FILL TOWER	.08732	JOB

VT-54 • 2.11524 HRS PER JOB

VT-55	CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (25-99 TON). --INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING AND HEATING COILS AND AIR PLENUM; INSPECT FAN AND MOTORS; ADJUST FAN MOTOR PULLEYS AND LUBRICATE PAN BEARINGS.			
NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS V38
1	PNUU-1-8000	REMOVE AND INSTALL SCREEN	.42720	JOB
2	PNUU-1-8013	REMOVE AND INSTALL PANEL	.13860	JOB
3	PHG-40-II	SENSE/TY INSPECT SQUIRREL CAGE FAN AND MOTOR	.00420	JOB
4	PHG-40-XXIV	CLEAN SQUIRREL CAGE FAN	.77926	JOB
5	PNUU-1-8031	CLEAN COOLING AND HEATING COILS	2.46600	JOB
6	PHV-2-I	CLEAN AIR PLENUM (AVG. 182 SG. FT.)	.18688	JOB
			.10000	JOB
7	PHG-40-I	GREASE FAN BEARINGS	.03925	JOB
8	S607	ADJUST FAN MOTOR PULLEYS	.10200	JOB

VT-55 • 6.31831 HRS PER JOB

VT-56            CLEAN, INSPECT, ADJUST AND LUBRICATE EVAPORATIVE CONDENSER OR METAL COOLING TOWER (3-9 TON).  
--INCLUDES REMOVE AND INSTALL PANELS; DRAIN AND FILL CONDENSER; CLEAN INSIDE CABINET AND COMPONENT WITH WATER HOSE, BRUSH AND/OR CLOTH; INSPECT MOTOR; ADJUST MOTOR AND FLOAT; LUBRICATE FAN AND MOTOR BEARINGS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V3
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.21360	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL PANEL	.14660	JOB	
3	PNG-2-I	CLEAN INSIDE CABINET WITH HOSE (AVG. 48 SQ. FT.)	.18680	JOB	
4	PNG-2-II	CLEAN INSIDE CABINET BY SCRAPPING, BRUSHING AND WIPING. (AVG. 20 SQ. FT.)	.02180	JOB	
5	PNG-40-EV	CLEAN BLOWER FAN	.04911	JOB	
6	PNG-40-I	LUBRICATE FAN	.01210	JOB	
7	PNG-34-II	CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR	.04810	JOB	
8	PMMU-1-8011	REMOVE AND INSTALL BELT	.03660	JOB	
9	PMMU-1-8028	CLEAN WATER PUMP	.08460	JOB	
10	PNG-40-I	LUBRICATE WATER PUMP	.01210	JOB	
11	PMMU-1-8013	REMOVE AND INSTALL SPRAY NOZZLE	.46200	JOB	
12	PMMU-1-8026	CLEAN SPRAY NOZZLE	.16400	JOB	
13	PMMU-1-8013	REMOVE AND INSTALL FLOAT	.04620	JOB	
14	PMMU-1-8026	CLEAN FLOAT	.01660	JOB	
15	S601	ADJUST FLOAT	.04000	JOB	
16	PNG-2C-II	DRAIN AND FILL CONDENSER	.22800	JOB	

VT-56 = .000204 HRS PER JOB

VT-57            CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (100-250 TON).  
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN AND MOTOR, COOLING COILS AND AIR PLENUM; INSPECT FAN AND MOTORS; ADJUST FAN MOTOR PULLEY; LUBRICATE FAN BEARINGS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V3
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.56900	JOB	
2	PMMU-1-8013	REMOVE AND INSTALL PANEL	.10480	JOB	
3	PNG-40-XI	SENSORY INSPECT SQUIRREL CAGE FAN AND MOTOR	.08620	JOB	
4	PNG-40-XXV	CLEAN SQUIRREL CAGE FAN	1.83750	JOB	
5	PMMU-1-8031	CLEAN COOLING COILS	3.96200	JOB	
6	PNG-2-I	CLEAN AIR PLENUM (AVG. OF 520 SQ. FT.)	.18680	JOB	
7	PNG-40-I	GREASE FAN BEARINGS	.03029	JOB	
8	S607	ADJUST FAN MOTOR PULLEY	.10200	JOB	

VT-57 = 6.86921 HRS PER JOB

VT-58            CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING  
UNIT (100-250 TON).  
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN  
CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING AND HEAT-  
ING COILS AND AIR PLENUM; INSPECT FAN AND MOTOR;  
ADJUST FAN MOTOR PULLEY; LUBRICATE FAN BEARINGS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWNU-1-8000	REMOVE AND INSTALL SCREWS	.38960	JOB	
2	PWNU-1-8013	REMOVE AND INSTALL PANEL	.18480	JOB	
3	PWG-40-II	SENSORY INSPECT SQUIRREL CAGE FAN AND MOTOR	.08420	JOB	
4	PWG-40-IV	CLEAN SQUIRREL CAGE FAN	1.03736	JOB	
5	PWNU-1-8031	CLEAN COOLING AND HEATING COILS	7.12480	JOB	
6	PWV-2-I	CLEAN AIR PLENUM (AVG. OF 526 SQ. FT.)	.18680	JOB	
7	PWG-40-I	GREASE FAN BEARINGS	.03829	JOB	
8	S607	ADJUST FAN MOTOR PULLEY	.10280	JOB	

VT-58 = 10.43321 HRS PER JOB

VT-59            CLEAN, INSPECT, ADJUST AND LUBRICATE WOOD COOLING  
TOWER (300-999 TON).  
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN INSIDE  
OF TOWER, FAN, MOTOR, WATER PUMP AND FLOAT WITH  
WATER HOSE, BRUSH AND/OR CLOTH; INSPECT; ADJUST  
MOTOR AND PLATES; LUBRICATE FAN, MOTOR, WATER PUMP  
AND OIL TO GEAR BOX.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWNU-1-8000	REMOVE AND INSTALL SCREEN	.14260	JOB	
2	PWNU-1-8011	REMOVE AND INSTALL PANEL	.14660	JOB	
3	PWNU-1-8012	REMOVE AND INSTALL SLAT	.28480	JOB	
4	PWNU-1-8006	TIGHTEN FLANGE NUT	.09360	JOB	
5	PWV-2-I	CLEAN INSIDE OF TOWER WITH WATER HOSE	.18680	JOB	
6	PWV-2-II	CLEAN INSIDE OF TOWER BY SCRAPING, BRUSHING AND WIPEING	7.71880	JOB	
7	PWG-40-IV	CLEAN FAN	.14733	JOB	
8	PWG-40-I	LUBRICATE FAN	.01815	JOB	
9	PWG-34-II	CLEAN, LUBRICATE, AND ADJUST MOTOR	.14430	JOB	
10	PWNU-1-8011	REMOVE AND INSTALL BELT	.07320	JOB	
11	PWNU-1-8028	CLEAN WATER PUMP	.08460	JOB	
12	PWG-40-I	LUBRICATE WATER PUMP	.01210	JOB	
13	PWNU-1-8013	REMOVE AND INSTALL FLOAT	.04620	JOB	
14	PWNU-1-8026	CLEAN FLOAT	.01660	JOB	
15	S601	ADJUST FLOAT	.04800	JOB	
16	PWV-2-IV	PREPARE TO CRATE OR FILL TOWER	.17464	JOB	
17	PWNU-1-8000	REMOVE AND INSTALL GEAR BOX PLUG	.09343	JOB	
18	PWG-40-VI	ADD OIL TO GEAR BOX	.02142	JOB	

VT-59 = 10.38938 HRS PER JOB

VT-60            RECURRING MAINTENANCE--INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (25-250 TON SYSTEM)-- INCLUDES REMOVE AND INSTALL PANEL; INSPECT PAN AND MOTORS; ADJUST BELT TENSION; LUBRICATE BEARINGS; REPLACE FILTER; AND FILL OUT INSPECTION REPORT.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.36960	JOB	
2	PWNU-1-8012	REMOVE AND INSTALL PANEL	.07120	JOB	
3	PWG-40-II	SENSORY INSPECT PAN AND MOTOR	.08620	JOB	
4	PWG-40-I	GREASE BEARINGS	.03025	JOB	
5	5607	ADJUST BELT TENSION	.10200	JOB	
6	PWNU-1-8010	REMOVE AND INSTALL DISPOSABLE FILTER	.15720	JOB	
7	PWG-40-IIII	FILL OUT INSPECTION REPORT	.01375	JOB	

VT-60 = 1.02020 HRS PER JOB

VT-61            CLEAN, LUBRICATE, ADJUST AND INSPECT EVAPORATIVE CONDENSER OR METAL COOLING TOWER (25-40 TON SYS.)-- INCLUDES DRAINING AND FILLING.-- DOES NOT INCLUDE ACID CLEANING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8000	REMOVE AND INSTALL SCREW	.21360	JOB	
2	PWNU-1-8011	REMOVE AND INSTALL PANEL	.21960	JOB	
3	PWV-2-I	CLEAN INSIDE CABINET WITH WATER HOSE	.10680	JOB	
4	PWV-2-II	CLEAN INSIDE OF CABINET BY SCRAPING, BRUSHING AND WIPING	.02184	JOB	
5	PWG-40-IIIV	CLEAN BLOWER PAN	.77926	JOB	
6	PWG-40-I	LUBRICATE BLOWER PAN	.02420	JOB	
7	PWG-34-II	CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR	.09620	JOB	
8	PWNU-1-8011	REMOVE AND INSTALL BELT	.07320	JOB	
9	PWNU-1-8028	CLEAN WATER PUMP	.08440	JOB	
10	PWG-40-I	LUBRICATE WATER PUMP	.01210	JOB	
11	PWNU-1-8013	REMOVE AND INSTALL NOZZLES	1.38600	JOB	
12	PWNU-1-8026	CLEAN NOZZLES	.49200	JOB	
13	PWNU-1-8013	REMOVE AND INSTALL FLOAT	.04620	JOB	
14	PWNU-1-8026	CLEAN FLOAT	.01640	JOB	
15	5601	ADJUST FLOAT	.04000	JOB	
16	PWNU-1-8011	REMOVE AND INSTALL RAPPLLE	.21960	JOB	
17	PWG-20-II	DRAIN AND FILL CONDENSER	.68400	JOB	

VT-61 = 4.89947 HRS PER JOB

VT-62	CLEAN, LUBRICATE, ADJUST AND INSPECT AIR-COOLED CONDENSER (3-1/2 TON AIR CONDITIONING SYSTEM)			
NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS V30
1	PNUU-1-8000	REMOVE AND INSTALL SCREW	.17800	JOB
2	PNUU-1-8011	REMOVE AND INSTALL PANEL	.14640	JOB
3	PNU-2-1	CLEAN INSIDE CABINET WITH WATER HOSE	.18660	JOB
			.91800	JOB
4	PNU-2-11	CLEAN INSIDE CP CABINET BY SCRAPING, BRUSHING AND WIPING	.02186	JOB
			.20960	JOB
5	PNG-40-IV	CLEAN PAN	.04911	JOB
6	PNG-40-I	LUBRICATE PAN	.01210	JOB
7	PNG-34-II	CLEAN, LUBRICATE AND ADJUST MOTOR	.04810	JOB
8	PNUU-1-8011	REMOVE AND INSTALL BELT	.07320	JOB
VT-62	*	.93918 HRS PER JOB		

VT-63	CLEAN, LUBRICATE, ADJUST AND INSPECT EVAPORATIVE CONDENSER OR METAL COOLING TOWER (100-199 SYSTEM) -INCLUDES DRAINING AND FILLING.-- DOES NOT INCLUDE ACID CLEAN.			
NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS V30
1	PNUU-1-8000	REMOVE AND INSTALL SCREW	.32040	JOB
2	PNUU-1-8011	REMOVE AND INSTALL PANEL	.29280	JOB
3	PNU-2-1	CLEAN INSIDE CABINET WITH WATER HOSE	.18680	JOB
			.12000	JOB
4	PNU-2-11	CLEAN INSIDE CABINET BY SCRAPING, BRUSHING AND WIPING	.02186	JOB
			.03736	JOB
5	PNG-40-EEIV	CLEAN BLOWER PAN	1.93818	JOB
6	PNG-40-I	LUBRICATE PAN	.06050	JOB
7	PNG-34-II	CLEAN, LUBRICATE AND ADJUST MOTOR	.06810	JOB
8	PNUU-1-8011	REMOVE AND INSTALL BELT	.14640	JOB
9	PNUU-1-8020	CLEAN WATER PUMP	.08640	JOB
10	PNG-40-I	LUBRICATE WATER PUMP	.01210	JOB
11	PNUU-1-8013	REMOVE AND INSTALL NOZZLE	2.31000	JOB
12	PNUU-1-8026	CLEAN NOZZLE	.02000	JOB
13	PNUU-1-8013	REMOVE AND INSTALL FLOAT	.04620	JOB
14	PNUU-1-8026	CLEAN FLOAT	.01640	JOB
15	SG01	ADJUST FLOAT	.06000	JOB
16	PNUU-1-8011	REMOVE AND INSTALL BAFFLE	.06000	JOB
17	PNG-20-II	FILL AND DRAIN CONDENSER	1.92000	JOB
VT-63	*	8.98764 HRS PER JOB		

VT-64                    CLEAN, LUBRICATE, ADJUST AND INSPECT AIR-COOLED CONDENSER (25-49 TON AIR CONDITIONING SYSTEM)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.24920	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL PANEL	.14640	JOB	
3	PMMU-1-1	CLEAN INSIDE OF CABINET WITH WATER	.18680	JOB	
4	PMMU-2-12	CLEAN INSIDE CABINET BY SCRAPING, BRUSHING AND WIPEING	.02184	JOB	
5	PMMU-40-XV	CLEAN PAN	.04911	JOB	
6	PMMU-40-1	LUBRICATE PAN	.01210	JOB	
7	PMMU-34-II	CLEAN, LUBRICATE AND ADJUST MOTOR	.04810	JOB	
8	PMMU-1-8.11	REMOVE AND INSTALL BELT	.07320	JOB	
9	PMMU-9-II	MATERIAL HANDLING	.61436	JOB	

VT-64 = 2.28912 HRS PER JOB

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VT-65                    REMOVE AND INSTALL 100-DISPOSABLE TYPE FILTERS FROM OVERHEAD PLENUMS.--AVG. 10 PLENUMS PER 100 FILTERS. LADDER USE INCLUDED.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL WING NUT OR SCREW	1.06900	JOB	
2	PMMU-1-8022	REMOVE AND INSTALL PANEL	2.05600	JOB	
3	PMMU-1-8010	REMOVE AND INSTALL 100 DISPOSABLE FILTERS AVG. 10 PLENUMS PER 100 FILTERS	2.62000	JOB	
4	PMMU-9-II	MATERIAL HANDLING	.20710	JOB	
5	PMMU-1-8032	GET, ASCEND, DESCEND, AND ASIDE LADDER	.20700	JOB	

VT-65 = 6.15810 HRS PER JOB

VT-66 PUNCH TUBES IN SHELL AND TUBE WATER-COOLED CONDENSER OR CHILLED WATER EVAPORATOR (700-800 TON SYS.)  
--INCLUDES DRAIN AND FILL, REMOVE AND INSTALL END PLATES, AND FABRICATE AND INSTALL GASKETS. USE LADDER OR SCAFFOLDING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWQ-19-VIII	REMOVE AND INSTALL PIPE FITTING	.54868	JOB	
2	PWQ-20-II	DRAIN AND FILL TUBES	1.32000	JOB	
3	PWNU-1-8552	REMOVE AND INSTALL LARGE NUT	1.92600	JOB	
4	PWN-10-XIII	REMOVE AND INSTALL END PLATES	1.13560	JOB	
5	PWV-19-II	PUNCH CLEAN TUBE UP TO 32 FEET LONG	.02408	JOB	
6	PWV-19-II	DRY TUBE WITH RAG	.02408	JOB	
7	PWN-19-II	CUT 2 GASKETS	.01964	JOB	
8	PWN-19-K8	PUNCH 32 HOLES IN GASKET	.00201	JOB	
9	PWNU-1-8022	INSTALL GASKET	.20560	JOB	
10	PWA-8-II	MATERIAL HANDLING	.61436	JOB	
11	PWNU-1-8052	GET, ASCEND, DESCEND, AND ASIDE LADDER	.04140	JOB	
VT-66		• 14.72301 HRS PER JOB			

VT-67 REMOVE AND INSTALL VALVE PLATES ON COMPRESSOR IN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	VT-2	RUN COMPRESSOR TO PUMPOWN	.38220	JOB	
2	PWNU-1-8552	REMOVE AND INSTALL COMPRESSOR HEAD BOLTS	.52320	JOB	
3	SS19	REMOVE HEAD PLATE CCVER	.65622	JOB	
4	PWNU-1-8000	REMOVE AND INSTALL VALVE PLATE BOLTS	.28480	JOB	
5	SS19	REMOVE VALVE PLATE	.05622	JOB	
6	SS28	REMOVE AND INSTALL GASKET ON VALVE PLATE OR HEAD COVER	.05200	JOB	
7	2983	INSTALL VALVE PLATE OR HEAD COVER	.00632	JOB	
8	PWV-1-XVIIIZ	PULL VACUUM ON SYSTEM	1.32348	JOB	
9	VT-1	CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM	.62143	JOB	
10	PWV-1-II	PUT SYSTEM INTO OPERATION	.95211	JOB	
VT-67		• 4.63889 HRS PER JOB			

VT-68            REMOVE AND INSTALL DOOR GASKET ON DOMESTIC REFRIGERATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREWS	.78320	JOB	
2	PMMU-1-8021	REMOVE AND INSTALL DOOR PANEL	.06900	JOB	
3	PMMU-1-8011	REMOVE AND INSTALL GASKET	.07320	JOB	
4	S601	ADJUST PANEL AND GASKET TO HOLES	.16000	JOB	
5	S604	ALIGN AND ADJUST DOOR	.07100	JOB	
6	4208	CHECK DOOR FOR FIT	.04200	JOB	
7	PMMU-1-8027	CLEAN DOOR	.03590	JOB	

VT-68 = 1.21430 HRS PER JOB

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VT-69            REMOVE AND INSTALL BELT ON WATER COOLER.--INCLUDES REMOVE AND INSTALL ACCESS PANEL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8000	REMOVE AND INSTALL SCREW	.03560	JOB	
2	PMMU-1-8010	REMOVE AND INSTALL PANEL	.02620	JOB	
3	PMMU-1-8006	LOOSEN AND TIGHTEN BASE BOLTS	.05360	JOB	
4	PMMU-1-8010	REMOVE AND INSTALL BELT	.05240	JOB	
5	S600	ADJUST TENSION ON BELT	.05200	JOB	
6	PMMU-1-8005	PLUG AND UNPLUG UNIT	.00400	JOB	
7	4206	CHECK OPERATION	.00800	JOB	

VT-69 = .23180 HRS PER JOB

VT-70      SECURE SYSTEMS DRAIN AND FILL CRANKCASE; DISASSEMBLE AND ASSEMBLE; CLEANS; INSPECTS AND EVACUATE COMPRESSOR (10-15 TON AIR CONDITIONING SYSTEM)  
-JOBS NOT INCLUDE PUMP DOWN, REMOVAL AND/OR INSTALLATION OF COMPRESSOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	VIS
1	PWJ-14-IV	OPEN AND CLOSE VALVES	.03384	JOB	
2	PWMU-1-8952	REMOVE AND INSTALL VALVE BOLTS	.17450	JOB	
3	PWMU-1-8021	REMOVE AND INSTALL SERVICE VALVE AND GASKETS	.19600	JOB	
4	PWMU-1-8952	REMOVE AND INSTALL DRAIN PLUG	.02180	JOB	
5	PWN-3-V21	DRAIN AND FILL CRANK CASE	.07887	JOB	
			.02996	JOB	
6	PWMU-1-8952	REMOVE AND INSTALL HEAD BOLTS	.43600	JOB	
7	PWMU-1-9011	REMOVE AND INSTALL PLATE AND GASKET	.14640	JOB	
8	PWMU-1-8000	REMOVE AND INSTALL VALVE PLATE SCREW	.03360	JOB	
9	PWMU-1-8021	REMOVE AND INSTALL VALVE PLATE AND GASKET	.09600	JOB	
10	PWMU-1-8952	REMOVE AND INSTALL BASE PLATE BOLTS	.26160	JOB	
11	PWMU-1-9011	REMOVE AND INSTALL BASE PLATE AND GASKET	.14640	JOB	
12	PWMU-1-8952	REMOVE AND INSTALL SEAL PLATE BOLTS	.13080	JOB	
13	PWMU-1-8011	REMOVE AND INSTALL FLYWHEEL SHAFT KEY	.07320	JOB	
14	PWMU-1-8021	REMOVE AND INSTALL SEAL PLATE, BELLows AND GASKET	.14700	JOB	
15	PWMU-1-8013	REMOVE AND INSTALL SHAFT COLLAR	.04620	JOB	
16	PWMU-1-8952	REMOVE AND INSTALL THRUST NUT	.02180	JOB	
17	PWMU-1-8013	REMOVE AND INSTALL THRUST BEARING AND WASHERS	.09240	JOB	
18	PWMU-1-8952	REMOVE AND INSTALL CONNECTING ROD BOLTS	.08720	JOB	
19	PWMU-1-8010	REMOVE AND INSTALL BEARING CAP AND SHIMS	.10480	JOB	
20	PWMU-1-8952	REMOVE AND INSTALL SEAL BEARING BOLTS	.17440	JOB	
21	PWMU-1-8010	REMOVE AND INSTALL SEAL BEARING, PLATE AND GASKET	.07860	JOB	
22	PWMU-1-8021	REMOVE AND INSTALL CRANKSHAFT	.04300	JOB	
23	PWMU-1-8021	REMOVE AND INSTALL PISTON AND ROD ASSEMBLY	.09800	JOB	
24	PWMU-1-8021	REMOVE AND INSTALL PISTON RINGS	.29400	JOB	
25	PWMU-1-8021	REMOVE AND INSTALL WRIST PIN	.09800	JOB	
26	PWMU-1-8027	CLEAN PARTS	.71800	JOB	
27	4201	INSPECT PARTS	.33600	JOB	
28	VT-2	CONNECT, OPERATE AND DISCONNECT VACUUM PUMP	.78640	JOB	
29	PWA-3-II	MATERIAL HANDLING	.20718	JOB	

VT-70 = .5.17884 HRS PER JOB

## VT-71

SECURE SYSTEM; DRAIN AND FILL CRANKCASE; DISASSEMBLE AND ASSEMBLE; CLEAN, INSPECT, AND EVACUATE COMPRESSOR (30-100 TON AIR CONDITIONING SYSTEM). (DOES NOT INCLUDE PUMP DOWN, REMOVAL AND/OR INSTALLATION OF COMPRESSOR.)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWJ-1A-IV	OPEN AND CLOSE SERVICE VALVES	.03386	JOB	
2	PWHU-1-8552	REMOVE AND INSTALL SERVICE VALVE BOLTS	.17460	JOB	
3	PWHU-1-8021	REMOVE AND INSTALL VALVE AND GASKET	.19600	JOB	
4	PWHU-1-8552	REMOVE AND INSTALL DRAIN PLUG	.02180	JOB	
5	PWH-3-VII	DRAIN AND REFILL CRANKCASE	.37887	JOB	
6	PWHU-1-8552	REMOVE AND INSTALL HEAD BOLTS	1.30800	JOB	
7	PWHU-1-8011	REMOVE AND INSTALL HEAD AND GASKET	.43320	JOB	
8	PWHU-1-8000	REMOVE AND INSTALL VALVE PLATE SCREW	.10600	JOB	
9	PWHU-1-8021	REMOVE AND INSTALL VALVE PLATE AND GASKET	.29400	JOB	
10	PWHU-1-8552	REMOVE AND INSTALL BASE PLATE BOLTS	.91560	JOB	
11	PWHU-1-8011	REMOVE AND INSTALL CASE PLATE AND GASKET	.14640	JOB	
12	PWHU-1-8552	REMOVE AND INSTALL SEAL PLATE BOLT	.17460	JOB	
13	PWHU-1-8011	REMOVE AND INSTALL PLYWHEEL SHARP KEY	.07320	JOB	
14	PWHU-1-8021	REMOVE AND INSTALL SEAL PLATE, BELLows, AND GASKET	.14700	JOB	
15	PWHU-1-8013	REMOVE AND INSTALL SHARP COLLAR	.04620	JOB	
16	PWHU-1-8552	REMOVE AND INSTALL THRUST NUT	.02190	JOB	
17	PWHU-1-8013	REMOVE AND INSTALL THRUST BEARING AND WASHER	.09240	JOB	
18	PWHU-1-8552	REMOVE AND INSTALL CONNECTING ROD BOLTS	.26160	JOB	
19	PWHU-1-8010	REMOVE AND INSTALL BEARING CAP AND SHIM	.31460	JOB	
20	PWHU-1-8552	REMOVE AND INSTALL SEAL BEARING BOLTS	.26160	JOB	
21	PWHU-1-8010	REMOVE AND INSTALL SEAL BEARING, PLATE AND GASKET	.37880	JOB	
22	PWHU-1-8021	REMOVE AND INSTALL CRANKSHAFT	.04900	JOB	
23	PWHU-1-8021	REMOVE AND INSTALL PISTON AND ROD ASSEMBLY	.29400	JOB	
24	PWHU-1-8013	REMOVE AND INSTALL PISTON RINGS	.03160	JOB	
25	PWHU-1-8013	REMOVE AND INSTALL WRIST PIN	.27720	JOB	
26	PWHU-1-8027	CLEAN PARTS	1.00520	JOB	
27	6201	INSPECT PARTS	.57600	JOB	
28	VT-2	CONNECT, OPERATE AND DISCONNECT VACUUM PUMP	.76440	JOB	
29	PWA-3-II	MATERIAL HANDLING	.31077	JOB	

VT-71 = 9.32323 HRS PER JOB

VT-72                    REPLACE SEALS AND BEARINGS IN WATER PUMP WITH 3-HP MOTOR.  
--INCLUDES SECURE SYSTEM; REMOVE AND INSTALL PUMP; DISASSEMBLE AND ASSEMBLE ACTIVATE SYSTEM.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNUU-1-8003	TURN POWER OFF AND ON	.00400	JOB	
2	PNG-14-IV	CLOSE & OPEN VALVES	.03384	JOB	
3	PNUU-1-8592	REMOVE AND INSTALL DRAIN PLUG	.02180	JOB	
4	PNUU-1-8012	SECURE WATER LINES IN POSITION	.03560	JOB	
5	PNUU-1-8592	REMOVE AND INSTALL STRAINER SECTION	.17440	JOB	
6	PNUU-1-8352	REMOVE AND INSTALL SHOCK ABSORBER	.17440	JOB	
7	PNUU-1-8000	REMOVE AND INSTALL BOLTS IN HOUSING	.17800	JOB	
8	PNUU-1-8012	REMOVE AND INSTALL HOUSING AND GASKET	.14640	JOB	
9	PNUU-1-8592	REMOVE AND INSTALL MOUNTING BOLTS	.08720	JOB	
10	PNUU-1-8004	LOOSEN AND TIGHTEN COUPLING SCREWS	.02680	JOB	
11	PNUU-1-8013	REMOVE AND INSTALL COUPLING	.02180	JOB	
12	PNUU-1-8592	REMOVE AND INSTALL IMPELLER NUT	.04900	JOB	
13	PNUU-1-8021	REMOVE AND INSTALL IMPELLER	.09240	JOB	
14	PNUU-1-8013	REMOVE AND INSTALL SEALS	.13080	JOB	
15	PNUU-1-8592	REMOVE AND INSTALL BEARING BOLTS	.14640	JOB	
16	PNUU-1-8012	REMOVE AND INSTALL SMART BEARINGS	.20710	JOB	
17	PWA-5-II	MATERIAL HANDLING			

VT-72 = 1.57622 HRS PER JOB

VT-73                    REMOVE AND INSTALL CENTRIFUGAL (SQUIRREL CAGE) FAN AND MOTOR

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-3-I	REMOVE AND INSTALL CENTRIPUGAL (SQUIRREL CAGE) FAN	.23903	JOB	
2	PHV-3-II	REMOVE AND INSTALL DOUBLE CENTRIPUGAL (SQUIRREL CAGE) FANS	.42367	JOB	
3	PHV-3-III	REMOVE AND INSTALL CENTRIFUGAL PAN MOTOR	1.05927	JOB	
4	PNUU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.01700	JOB	
5	PWA-5-II	MATERIAL HANDLING	.10359	JOB	

VT-73 = 1.84336 HRS PER JOB

VT-74 REMOVE AND INSTALL AIR COOLING UNIT PROPELLER TYPE  
FAN AND MOTOR

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-3-IV	REMOVE AND INSTALL FAN MOTOR	1.29409	JOB	
2	PWV-3-V	REMOVE AND INSTALL FAN	.51312	JOB	
3	PWMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.01700	JOB	
4	PWA-5-II	MATERIAL HANDLING	.10359	JOB	

VT-74 = 1.92780 HRS PER JOB

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VT-75 REMOVE AND INSTALL FAN AND MOTOR IN WATER TOWER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-3-VI	REMOVE AND INSTALL FAN MOTOR	2.34273	JOB	
2	PWMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.08500	JOB	
3	PWA-5-II	MATERIAL HANDLING	.10359	JOB	

VT-75 = 2.53132 HRS PER JOB

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VT-76 REMOVE WINDOW AIR CONDITIONER ( UP TO 1/2 TON ) FROM RAISABLE WINDOW

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	2235	UNPLUG UNIT	.00099	JOB	
2	2848	TIE UP ELECTRICAL CORD	.00185	JOB	
3	PWMU-1-8005	RAISE AND LOWER WINCON	.00400	JOB	
4	PWMU-1-8010	REMOVE WEATHERSTRIPPING	.01310	JOB	
5	PWMU-1-8010	REMOVE FILLER PANEL	.02620	JOB	
6	PWMU-1-8553	LOOSEN LEVELING SCREW	.01740	JOB	
7	PWMU-1-2021	REMOVE UNIT FROM WINDOW	.02450	JOB	
8	PWA-5-II	MATERIAL HANDLING	.20710	JOB	
9	PWMU-1-8052	GET, ASCEND, DESCEND, AND ASIDE LADDER	.02070	JOB	
10	PWG-60-KII	FILL OUT RECORD SHEET	.01189	JOB	

VT-76 = .32777 HRS PER JOB

VT-77            INSTALL WINDOW AIR CONDITIONER ( UP TO 1/2 TON )  
IN RAISABLE WINDOW

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8005	RAISE AND LOWER WINDOW	.00400	JOB	
2	PWMU-1-8021	REMOVE UNIT FROM CARTON	.02450	JOB	
3	PWMU-1-8021	POSITION UNIT IN WINDOW	.02450	JOB	
4	PWMU-1-8552	INSTALL LEVELING ARM	.08720	JOB	
5	PWMU-1-8553	ADJUST AND TIGHTEN LEVELING SCREW	.01740	JOB	
6	PWMU-1-8010	INSTALL PILLER PANEL	.02620	JOB	
7	PWMU-1-8010	INSTALL WEATHERSTRIPPING	.01310	JOB	
8	2234	PLUG IN UNIT	.00125	JOB	
9	4211	CHECK OPERATION	.29200	JOB	
10	PWA-5-II	MATERIAL HANDLING	.20710	JOB	

VT-77 = .69733 HRS PER JOB

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VT-200            ASSIST BOILER INSPECTOR IN EXTERNAL INSPECTION OF  
FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100 TO  
200 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PBV-14-I	EXTERNALLY INSPECT FIRE TUBE BOILER	.38283	JOB	

VT-200 = .38283 HRS PER JOB

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VT-201            ASSIST BOILER INSPECTOR IN EXTERNAL INSPECTION OF  
WATER TUBE BOILER, 16,740 TO 33,480 LB./HR. (500  
TO 1000 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PBV-14-II	EXTERNALLY INSPECT WATER TUBE BOILER	.46372	JOB	

VT-201 = .46372 HRS PER JOB

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VT-202            ASSIST BOILER INSPECTOR IN INTERNAL INSPECTION OF  
FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100 TO  
200 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PBV-14-III	INTERNALLY INSPECT FIRE TUBE BOILER	.67065	JOB	

VT-202 = .67065 HRS PER JOB

VT-203 ASSIST BOILER INSPECTOR IN INTERNAL INSPECTION OF  
WATER TUBE BOILER, 16,740 TO 33,480 LB./HR. (500  
TO 1000 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-14-IV	INTERNALLY INSPECT WATER TUBE BOILER	1.62617	JOB	

VT-203 = 1.62617 HRS PER JOB

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VT-204 ASSIST BOILER INSPECTOR IN OPERATIONAL TEST OF  
FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100 TO  
200 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-14-VII	TEST OPERATION OF FIRE TUBE BOILER	.53314	JOB	

VT-204 = .53314 HRS PER JOB

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VT-205 ASSIST BOILER INSPECTOR IN OPERATIONAL TEST OF  
WATER TUBE BOILER, 16,740 TO 33,480 LB./HR. (500  
TO 1000 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-14-VIII	TEST OPERATION OF WATER TUBE BOILER	.87561	JOB	

VT-205 = .87561 HRS PER JOB

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VT-206 ASSIST BOILER INSPECTOR IN HYDROSTATIC INSPECTION  
OF FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100  
TO 200 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-14-V	HYDROSTATIC INSPECT FIRE TUBE BOILER	1.48028	JOB	

VT-206 = 1.48028 HRS PER JOB

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VT-207 ASSIST BOILER INSPECTOR IN HYDROSTATIC INSPECTION  
OF WATER TUBE BOILER, 16,740 TO 33,480 LB./HR.  
(500 TO 1000 HP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-14-VI	HYDROSTATIC INSPECT WATER TUBE BOILER	2.43572	JOB	

VT-207 = 2.43572 HRS PER JOB

VT-208 ASSIST BOILER INSPECTOR IN EXTERNAL AND INTERNAL  
INSPECTION OF FIRE TUBE BOILER, 3,348 TO 6,696 LB.  
/HR. (100 TO 200 MP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-14-III	INTERNALY INSPECT FIRE TUBE BOILER	.67065	JOB	
2	PWV-14-I	EXTERNALLY INSPECT FIRE TUBE BOILER	.38283	JOB	

VT-208 = 1.05358 HRS PER JOB

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VT-209 ASSIST BOILER INSPECTOR IN EXTERNAL AND INTERNAL  
INSPECTION OF WATER TUBE BOILER, 16,740 TO 33,488  
LB./HR. (500 TO 1000 MP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-14-IV	INTERNALY INSPECT WATER TUBE BOILER	1.42617	JOB	
2	PWV-14-II	EXTERNALLY INSPECT WATER TUBE BOILER	.46372	JOB	

VT-209 = 1.88989 HRS PER JOB

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VT-210 ASSIST BOILER INSPECTOR IN INTERNAL, EXTERNAL AND  
HYDROSTATIC INSPECTION OF PIPE TUBE BOILER, 3,348  
TO 6,696 LB./HR. (100 TO 200 MP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-14-III	INTERNALY INSPECT PIPE TUBE BOILER	.67065	JOB	
2	PWV-14-I	EXTERNALLY INSPECT PIPE TUBE BOILER	.38283	JOB	
3	PWV-14-V	HYDROSTATIC INSPECT PIPE TUBE BOILER	1.48020	JOB	

VT-210 = 2.53376 HRS PER JOB

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VT-211 ASSIST BOILER INSPECTOR IN INTERNAL, EXTERNAL AND  
HYDROSTATIC INSPECTION OF WATER TUBE BOILER,  
16,740 TO 33,488 LB./HR. (500 TO 1000 MP)

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-14-IV	INTERNALY INSPECT WATER TUBE BOILER	1.42617	JOB	
2	PWV-14-II	EXTERNALLY INSPECT WATER TUBE BOILER	.46372	JOB	
3	PWV-14-V	HYDROSTATIC INSPECT WATER TUBE BOILER	2.43372	JOB	

VT-211 = 6.32561 HRS PER JOB

VT-212 REMOVE OR INSTALL TUBE SHEET COMPARTMENT DOOR ON  
FIRE TUBE OR WATER TUBE BOILER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	VI
00	*****	*****	*****	*****	*****
1	PWV-11-1	OPEN OR CLOSE TUBE SHEET COMPARTMENT DOOR	.00027	JOB	

VT-212 • .00027 HRS PER JOB

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VT-213 REMOVE OR INSTALL FIRE BOX DOOR ON FIRE TUBE OR  
WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	VI
00	*****	*****	*****	*****	*****
1	PWV-11-11	OPEN OR CLOSE FIRE BOX DOOR	.09180	JOB	

VT-213 • .09180 HRS PER JOB

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VT-214 REMOVE OR INSTALL ASH PIT DOOR ON FIRE TUBE OR  
WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	VI
00	*****	*****	*****	*****	*****
1	PWV-11-11	OPEN OR CLOSE ASH PIT DOOR	.09180	JOB	

VT-214 • .09180 HRS PER JOB

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VT-215 REMOVE OR INSTALL ACCESS PASS DOOR ON FIRE TUBE  
OR WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	VI
00	*****	*****	*****	*****	*****
1	PWV-11-11	OPEN OR CLOSE ACCESS PASS DOOR	.09180	JOB	

VT-215 • .09180 HRS PER JOB

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VT-216 REMOVE OR INSTALL EXPLOSION-PROOF DOOR ON FIRE  
TUBE OR WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	VI
00	*****	*****	*****	*****	*****
1	PWV-10-11	INSTALL OR REMOVE EXPLOSION-PROOF DOOR	.09216	JOB	

VT-216 • .09216 HRS PER JOB

VT-217 REMOVE OR INSTALL SUPERFATTE DOOR ON WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-10-III	INSTALL OR REMOVE SUPERFATTE DOOR	.00816	JOB	

VT-217 = .00816 HRS PER JOB

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VT-218 REMOVE OR INSTALL PRECIPITATOR DOOR ON WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-10-III	REMOVE OR INSTALL DOOR NUTS	.25936	JOB	
2	PWV-10-III	DRIVE OR REMOVE DOOR BOLTS	.25936	JOB	
3	PWV-10-VIII	DRIVE OR INSTALL STEEL PLATE	.00863	JOB	
4	PWV-1-6550	DRIVE ADJUST WIRE AREA AND EQUIPMENT PERFORMING	.00172	JOB	

VT-218 = .52865 HRS PER JOB

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VT-219 REMOVE OR INSTALL ACCESS DOOR ON FIRE TUBE OR WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-11-II	OPEN OR CLOSE ACCESS DOOR	.09180	JOB	

VT-219 = .09180 HRS PER JOB

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VT-220 REMOVE OR INSTALL CLEAN OUT DOOR ON FIRE TUBE OR WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-11-VIII	REMOVE OR INSTALL CLEAN OUT DOOR	.02938	PLUG	

VT-220 = .02938 HRS PER PLUG

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VT-221 REMOVE OR INSTALL PEEPHOLE DOOR ON FIRE TUBE OR WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWV-11-VIII	REMOVE OR INSTALL PEEPHOLE DOOR	.02938	PLUG	

VT-221 = .02938 HRS PER PLUG

VT-222

REMOVE OR INSTALL BOLTED INSPECTION PLATES ON FIRE  
TUBE OR WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PUN-11-IV	REMOVE OR INSTALL INSPECTION PLATES (BOLTED)	.09723	COVER	

VT-222 \* .09723 HRS PER COVER

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VT-223

REMOVE OR INSTALL STEEL SHEET STRIP ON FIRE TUBE  
OR WATER TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PUN-10-VI	REMOVE OR INSTALL STEEL SHEET STRIP	.01263	JOB	

VT-223 \* .01263 HRS PER JOB

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VT-224

REMOVE OR INSTALL FIREBRICK TOP INSULATION ON BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PUN-10-IX	REMOVE OR INSTALL FIREBRICK TOP INSULATION	.00165	JOB	

VT-224 \* .00165 HRS PER JOB

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VT-225

REMOVE OR INSTALL FIREBRICK TOP ON BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PUN-10-X	REMOVE OR INSTALL FIREBRICK TOP	.03618	JOB	

VT-225 \* .03618 HRS PER JOB

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VT-226

REMOVE OR INSTALL FIREBRICK

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PUN-10-VII	REMOVE OR INSTALL FIREBRICK	.01265	JOB	

VT-226 \* .01265 HRS PER JOB

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VT-227 REMOVE OR INSTALL SHELL PLUG ON FIRE TUBE OR WATER  
TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-11-VIII	REMOVE OR INSTALL SHELL PLUG	.02538	PLUG	

VT-227 = .02538 HRS PER PLUG

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VT-228 REMOVE MANHOLE COVER ON FIRE TUBE OR WATER TUBE  
BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-11-IV	REMOVE MANHOLE COVER	.09723	COVER	

VT-228 = .09723 HRS PER COVER

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VT-229 REMOVE MANHOLE COVER ON FIRE TUBE OR WATER TUBE  
BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-11-VI	REMOVE MANHOLE COVER	.05468	COVER	

VT-229 = .05468 HRS PER COVER

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VT-230 INSTALL MANHOLE COVER ON FIRE TUBE OR WATER TUBE  
BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-11-V	INSTALL MANHOLE COVER	.20614	COVER	

VT-230 = .20614 HRS PER COVER

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VT-231 INSTALL MANHOLE COVER ON FIRE TUBE OR WATER TUBE  
BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-11-VII	INSTALL MANHOLE COVER	.11698	COVER	

VT-231 = .11698 HRS PER COVER

VT-232            PREPARE TO DRAIN BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-2-IV	PREPARE TO DRAIN BOILER	.08732	JOB	

VT-232 = .08732 HRS PER JOB

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VT-233            FILL BOILER AND INSPECT FOR LEAKS

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-3-IX	FILL BOILER AND INSPECT FOR LEAKS	.63164	JOB	

VT-233 = .63164 HRS PER JOB

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VT-234            CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE  
BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS,  
CLEANING FIREBOX (4' X 10' X 15'), TWO PASSES, AND  
166 TUBES (BY SCRAPING).-- DOES NOT INCLUDE  
ERECTING OR DISMANTLING SCAPFOLDING, VACUUMING TOP  
OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER,  
AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8597	ENTER AND LEAVE MANHOLES 7 TIMES	.06580	JOB	
2	PWS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	.02880	JOB	
3	PWS-2-IV	LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE	.42840	JOB	
4	PWA-5-II	MATERIAL HANDLING	.93231	JOB	
5	PWS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE	.37298	JOB	
6	PWV-2-II	SCRAPE AND BRUSH 30% OF FIREBOX WALLS AND CEILING (670 SF TOTAL) (161 SF SCRAPPED)	.82186	JOB	
7	PWV-2-II	SCRAPE CLEAN 330 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES	.82186	JOB	
8	PWMU-1-8596	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	3.39240	JOB	

VT-234 = 7.52403 HRS PER JOB

VT-235      CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE  
BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS,  
CLEANING FIREBOX (6'X 10'X 15'), TWO PASSES, AND  
110 TUBES (BY SCRAPING).-- DOES NOT INCLUDE  
ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP  
OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER,  
AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNU-1-8537	ENTER AND LEAVE MANHOLES 8 TIMES	.97520	JOB	
2	PWS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	1.65760	JOB	
3	PWS-2-IV	LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE	1.76120	JOB	
4	PMA-3-II	MATERIAL HANDLING	1.95385	JOB	
5	PWS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE	.87024	JOB	
6	PHV-2-II	SCRAPE AND BRUSH TOP OF FIREBOX WALLS AND CEILING (670 SF TOTAL) (329 SF SCRAPPED)	.02184	JOB	
7	PHV-2-II	SCRAPE CLEAN 509 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES	.02184	JOB	
8	PNU-1-8536	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.01360	JOB	

VT-235 = 14.59001 HRS PER JOB

VT-236      CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE  
BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS,  
CLEANING FIREBOX (8'X 13'X 20'), TWO PASSES, AND  
182 TUBES (BY SCRAPING).-- DOES NOT INCLUDE  
ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP  
OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER,  
AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNU-1-8537	ENTER AND LEAVE MANHOLES 10 TIMES	.09400	JOB	
2	PWS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	2.92784	JOB	
3	PWS-2-IV	LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE	2.42760	JOB	
4	PMA-3-II	MATERIAL HANDLING	2.79693	JOB	
5	PWS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE	1.57472	JOB	
6	PHV-2-II	SCRAPE AND BRUSH 308 OF FIREBOX WALLS AND CEILING (780 SF TOTAL) (234 SF SCRAPPED)	.02184	JOB	
7	PHV-2-II	SCRAPE CLEAN TUBES IN FIREBOX, PASSES AND VACUUM PASSES (360 SF)	.02184	JOB	
8	PNU-1-8536	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.19300	JOB	

VT-236 = 19.72409 HRS PER JOB

VT-237            CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (10'X 16'X 20'), TWO PASSES, AND 317 TUBES (BY SCRAPING).-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8557	ENTER AND LEAVE MANHOLES 12 TIMES	.11280	JOB	
2	PWS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	3.23232	JOB	
3	PWS-2-IV	LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE	3.66520	JOB	
4	PWA-5-II	MATERIAL HANDLING	3.31488	JOB	
5	PWS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE	1.98912	JOB	
6	PNV-2-II	SCRAPE AND BRUSH 30% OF FIREBOX WALLS AND CEILING (1000 SF TOTAL) (300 SF SCRAPED)	.02184	JOB	
7	PNV-2-II	SCRAPE CLEAN 631 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES.	.02184	JOB	
8	PMMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.17000	JOB	

VT-237 = 22.09868 HRS PER JOB

VT-238            CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (14'X 20'X 30'), TWO PASSES, AND 400 TUBES (BY SCRAPING).-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8557	ENTER AND LEAVE MANHOLE 12 TIMES	.11280	JOB	
2	PWS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	3.37924	JOB	
3	PWS-2-IV	REMOVE LOOSE SLAG	4.52200	JOB	
4	PWA-5-II	MATERIAL HANDLING	4.04001	JOB	
5	PWS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE	3.48096	JOB	
6	PNV-2-II	SCRAPE AND BRUSH 30% OF FIREBOX WALLS AND CEILING (1900 SF TOTAL) (570 SF SCRAPED)	.02184	JOB	
7	PNV-2-II	SCRAPE CLEAN 794 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES	.02184	JOB	
8	PMMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.17000	JOB	

VT-238 = 30.36960 HRS PER JOB

VT-239      CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (8'X 13'X 20'), TWO PASSES, AND 182 TUBES (BY SCRAPING) AND VACUUMING TOP OF FIREBOX.-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38	
1	PMMU-1-8026	KNOCK DOWN SLAG BY REACHING THROUGH EXPLOSION-PROOF DOOR WITH HAMMER	.11480	JOB		
2	PMMU-1-8027	CLEAN SEVEN INSULATION BATS BY SHAVING IN FIREBOX	.29130	JOB		
3	PMS-2-I	VACUUM TOP OF FIREBOX	.18680	JOB	.06240	JOB
4	PMMU-1-8357	ENTER AND LEAVE MANHOLES 10 TIMES	.00400	JOB		
5	PMS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	3.92592	JOB		
6	PMS-2-IV	LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE	6.56880	JOB		
7	PMA-5-II	MATERIAL HANDLING	8.28720	JOB		
8	PMS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE	3.68816	JOB		
9	PMS-2-II	SCRAPE AND BRUSH TOP OF FIREBOX WALLS AND CEILING (780 SF TOTAL) (546 SF SCRAPPED)	.02184	JOB	3.61288	JOB
10	PMS-2-II	SCRAPE CLEAN 837 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES	.02184	JOB	8.60436	JOB
11	PMMU-1-8356	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.19300	JOB		

VT-239 • 39.59329 HRS PER JOB

VT-240            CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEAVING FIREBOX(10'X 16'X 20'), TWO PASSES, AND 420 TUBES (BY SCRAPING) AND VACUUMING TOP OR FIRE-BOX.-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38	
1	PMMU-1-8026	KNOCK DOWN SLAG BY REACHING THROUGH EXPLOSION-PROOF DOOR WITH HAMMER	.11480	JOB		
2	PWV-1-8027	CLEAN INSULATION BATS BY SHAKING IN FIREBOX	.32310	JOB		
3	PWS-2-I	VACUUM TOP OF FIREBOX	.18680	JOB	.09600	JOB
4	PMMU-1-8557	ENTER AND LEAVE MANHOLES	.11280	JOB		
5	PWS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	7.94208	JOB		
6	PWS-2-IV	LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE	8.47280	JOB		
7	PWA-5-II	MATERIAL HANDLING	7.66566	JOB		
8	PWS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE LINE	4.64128	JOB		
9	PWV-2-II	SCRAPE AND BRUSH 70% OF FIREBOX WALLS AND CEILING (1000 SF TOTAL) (700 SF SCRAPED)	.02184	JOB	7.19600	JOB
10	PWV-2-II	SCRAPE CLEAN 1932 SF OF TUBES IN FIREBOX AND PASSES AND VACUUM PASSES	.02184	JOB	19.86096	JOB
11	PMMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.20600	JOB		

VT-240 = 56.45995 HRS PER JOB

VT-261      CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX(16" X 20" X 30"), TWO PASSES, AND 600 TUBES (BY SCRAPING) AND VACUUMING TOP OF FIRE-BOX.-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWHU-1-8026	KNOCK DOWN SLAG BY REACHING THROUGH EXPLOSION-PROOF DOOR WITH HAMMER	.26240	JOB	
2	PWHU-1-8027	CLEAN INSULATION BATS BY SHAKING IN FIREBOX	.43080	JOB	
3	PWV-2-I	VACUUM TOP OF FIREBOX	.18680	JOB	
			.16800	JOB	
4	PWHU-1-8557	ENTER AND LEAVE MANHOLE	.14100	JOB	
5	PWS-2-III	REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM	9.28256	JOB	
6	PWS-2-IV	REMOVE LOOSE SLAG	10.47200	JOB	
7	PWA-5-II	MATERIAL HANDLING	9.53028	JOB	
8	PWS-2-III	RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE	8.12224	JOB	
9	PWV-2-II	SCRAPE AND BRUSH TOP OF WALLS AND CEILINGS IN FIREBOX (1900 SF TOTAL) (1330 SF SCRAPPED)	.02184	JOB	
			13.67240	JOB	
10	PWV-2-II	SCRAPE CLEAN 2778 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES	.02184	JOB	
			28.55784	JOB	
11	PWHU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.23800	JOB	

VT-261 = 81.10799 HRS PER JOB

VT-262      CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING INSIDE OF DRUM (5"X.5"X 20" LONG) AND RUNNING WATER (UNDER HIGH PRESSURE) IN 800 TUBE OPENINGS.-- DOES NOT INCLUDE TURBINING TUBES OR REMOVING OR REINSTALLING INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWHU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.01880	JOB	
2	PWV-2-I	CLEAN INSIDE DRUM BY HOsing DOWN	.18680	JOB	
			.18960	JOB	
3	PWV-2-I	WASH TUBE OPENINGS IN BOILER BY FLUSHING WITH WATER	.18680	JOB	
			.48000	JOB	
4	PWA-5-I	MATERIAL HANDLING	.03493	JOB	
5	PWHU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.03100	JOB	

VT-262 = 1.14753 HRS PER JOB

VT-243

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES  
WASHING AND SCRAPING DRUM (3" I.D. X 10" LONG), TUR-  
BINING 60 TUBES (1" TO 3" DIA. X 10" TO 20" LONG).  
DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL  
BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PWNU-1-8012	UNWIND AND WIND HOSE SECTIONS	.03560	JOB	
3	PWNU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.07520	JOB	
4	PWQ-14-IV	TURN VALVE ON AND OFF	.06768	JOB	
5	PWV-13-XI	PUSH 3/4" DIA. TURBINING AIR HOSE IN AND PULL OUT OF 60 (1" TO 3" DIA.) TUBES 10" TO 20" LONG	.19410	JOB	
6	PWNU-1-8011	REMOVE AND INSTALL TURBINING HEAD	.29280	JOB	
7	PWV-2-I	CLEAN INSIDE DRUM BY HOsing DOWN	.18680	JOB	
8	PWV-2-II	SCRAPE SOG OF DRUM INTERIOR	.02184	JOB	
9	PWA-5-II	MATERIAL HANDLING	.49344	JOB	
10	PWNU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.10359	JOB	
		VT-243 = 2.65846 HRS PER JOB			

VT-244

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES  
WASHING AND SCRAPING DRUM (3" I.D. X 10" LONG) TUR-  
BINING 110 TUBES (1" TO 3" DIA. X 10" TO 20" LONG).  
DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL  
BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PWNU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PWNU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.08460	JOB	
4	PWQ-14-IV	TURN VALVE ON AND OFF	.07614	JOB	
5	PWV-13-X	PUSH 3/4" DIA. TURBINING AIR HOSE IN AND PULL OUT OF 110 (1" TO 3") TUBES 10" TO 30" LONG	.19410	JOB	
6	PWNU-1-8011	REMOVE AND INSTALL TURBINING HEAD	.36600	JOB	
7	PWV-2-I	CLEAN INSIDE DRUM BY HOsing DOWN	.18680	JOB	
8	PWV-2-II	SCRAPE SOG OF DRUM INTERIOR	.02184	JOB	
9	PWA-5-II	MATERIAL HANDLING	.49344	JOB	
10	PWNU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.101020	JOB	
		VT-244 = 6.29290 HRS PER JOB			

VT-245      CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (3'I.D. X 20' LONG) AND TURBINING 98 TUBES (2 1/2" TO 4" DIA. X 30' TO 50' LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PWNU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PWNU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.09400	JOB	
4	PWQ-14-IV	TURN VALVE ON AND OFF	.07614	JOB	
5	PWV-13-II	PUSH 1 1/4" DIA. TURBINING AIR HOSE IN AND PULL OUT OF 98 (2 1/2" TO 4" DIA.) TUBES, 30' TO 50' LONG	.02408	JOB	
6	PWNU-1-8011	REMOVE AND INSTALL TURBINING HEAD	.36600	JOB	
7	PWV-2-I	CLEAN INSIDE DRUM BY HOsing DOWN	.18680	JOB	
			.11400	JOB	
8	PWV-2-II	SCRAPE 50% OF DRUM INTERIOR	.02184	JOB	
			.97660	JOB	
9	PWA-3-II	MATERIAL HANDLING	.10359	JOB	
10	PWNU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.08500	JOB	

VT-245 = 3.42084 HRS PER JOB

VT-246      CLEAN WATERSIDE OF WATER TUBE BOILER.--INCLUDES WASHING AND SCRAPING DRUM (3'I.D. X 20' LONG) AND TURBINING 141 TUBES (2 1/2" TO 4" DIA.X 30' TO 50' LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWNU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PWNU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PWNU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.10340	JOB	
4	PWQ-14-IV	TURN VALVE ON AND OFF	.08460	JOB	
5	PWV-13-X	PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 141 (2 1/2" TO 4") TUBES, 30' TO 50' LONG	.19410	JOB	
6	PWNU-1-8011	REMOVE AND INSTALL TURBINING HEAD	.36600	JOB	
7	PWV-2-I	CLEAN INSIDE DRUM BY HOsing DOWN	.18680	JOB	
			.11400	JOB	
8	PWV-2-II	SCRAPE 50% OF DRUM INTERIOR	.02184	JOB	
			.97660	JOB	
9	PWA-3-II	MATERIAL HANDLING	.10359	JOB	
10	PWNU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.10200	JOB	

VT-246 = 8.25612 HRS PER JOB

VT-247            CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES  
WASHING AND SCRAPING DRUM (3'I.O. X 20' LONG) AND  
TURBINING 240 TUBES (2 1/2" TO 4" DIA. X 30' TO 50'  
LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING  
INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PWMU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PWMU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.11280	JOB	
4	PWQ-14-IV	TURN VALVE ON AND OFF	.10192	JOB	
5	PWV-13-X	PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 240 (2 1/2" TO 4") TUBES 30' TO 50' LONG	.19410	JOB	
			10.08000	JOB	
6	PWMU-1-8011	REMOVE AND INSTALL TURBINING HEADS	.36600	JOB	
7	PWV-2-I	CLEAN INSIDE DRUM BY HOsing DOWN	.18680	JOB	
			.11400	JOB	
8	PWV-2-II	SCRAPE 50% OF DRUM INTERIOR	.02184	JOB	
			.97660	JOB	
9	PWA-5-II	MATERIAL HANDLING	.10359	JOB	
10	PWMU-1-8556	WALK AROUND WORK AREA "NO EQUIPMENT PERFORMING DUTIES	.11900	JOB	

VT-247 = 12.45545 HRS PER JOB

VT-248            CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES  
WASHING AND SCRAPING DRUM (3'I.O. X 20' LONG) AND  
TURBINING 321 TUBES (1 1/2" TO 4" DIA.X 30' TO 50'  
LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING  
INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PWMU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PWMU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.14100	JOB	
4	PWQ-14-IV	TURN VALVE ON AND OFF	.11844	JOB	
5	PWV-13-X	PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 321 (2 1/2" TO 4") TUBES 30' TO 50' LONG	.19410	JOB	
			13.48200	JOB	
6	PWMU-1-8005	REMOVE AND INSTALL TURBINING HEAD	.02400	JOB	
7	PWV-2-I	CLEAN INSIDE OF DRUM BY HOsing DOWN	.18649	JOB	
			.11400	JOB	
8	PWV-2-II	SCRAPE 50% OF DRUM INTERIOR	.02184	JOB	
			.97660	JOB	
9	PWA-5-II	MATERIAL HANDLING	.10359	JOB	
10	PWMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.13600	JOB	

VT-248 = 15.57757 HRS PER JOB

VT-249      CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (5" I.D. X 20" LONG) AND TURBINING 475 TUBES (2 1/2" TO 4" DIA.X 30" TO 50" LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PMMU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PMMU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.18800	JOB	
4	PMQ-14-IV	TURN VALVE ON AND OFF	.15220	JOB	
5	PMV-13-X	PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 475 (2 1/2" TO 4") TUBES 30" TO 50" LONG	.19610	JOB	
			19.95000	JOB	
6	PMMU-1-8003	REMOVE AND INSTALL TURBINE HEAD	.02800	JOB	
7	PMV-2-I	CLEAN INSIDE DRUM BY HOSING	.18680	JOB	
			.18960	JOB	
8	PMV-2-II	SCRAPE 50% OF DRUM INTERIOR	.02184	JOB	
			1.62424	JOB	
9	PMA-5-II	MATERIAL HANDLING	.10359	JOB	
10	PMMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.15300	JOB	

VT-249 = 22.87064 HRS PER JOB

VT-250      CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (5" I.D. X 20" LONG) AND TURBINING 590 TUBES (2 1/2" TO 4" DIA.X 30" TO 50" LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PMMU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PMMU-1-8557	ENTER AND LEAVE DRUM MANHOLE	.18340	JOB	
4	PMQ-14-IV	TURN VALVE ON AND OFF	.16920	JOB	
5	PMV-13-X	PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 590 (2 1/2" TO 4") TUBES 30" TO 50" LONG	.19410	JOB	
			24.78000	JOB	
6	PMMU-1-8011	REMOVE AND INSTALL TURBINE HEAD	.38560	JOB	
7	PMV-2-I	CLEAN INSIDE DRUM BY HOSING DOWN	.18680	JOB	
			.18960	JOB	
8	PMV-2-II	SCRAPE 50% OF DRUM INTERIOR	.02184	JOB	
			1.62424	JOB	
9	PMA-5-II	MATERIAL HANDLING	.20718	JOB	
10	PMMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.15300	JOB	

VT-250 = 28.29415 HRS PER JOB

VT-251

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES  
WASHING AND SCRAPING DRUM (5" I.D. X 20' LONG) AND  
TURBining 732 TUBES (2 1/2" TO 6" DIA.X 30' TO 50'  
LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING  
INTERNAL BAFFLING.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8352	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PMMU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PMMU-1-8357	ENTER AND LEAVE DRUM MANHOLE	.22560	JOB	
4	PWG-14-IV	TURN VALVE ON AND OFF	.16920	JOB	
5	PHV-13-X	PUSH 2 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 732 (2 1/2" TO 6") TUBES 30' TO 50' LONG	.19410 30.74400	JOB JOB	
6	PMMU-1-8005	REMOVE AND INSTALL TURBINING HEADS	.03200	JOB	
7	PHV-2-I	CLEAN INSIDE DRUM BY HOsing DOWN	.18680 .18960	JOB JOB	
8	PHV-2-II	SCRAPE 50' OF DRUM INTERIOR	.02184 1.62424	JOB JOB	
9	PWA-5-II	MATERIAL HANDLING	.20718	JOB	
10	PMMU-1-8356	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.17000	JOB	

VT-251 = 33.84375 HRS PER JOB

VT-252

CLEAN FIRESIDE OF AIR PREHEATER.-- INCLUDES WASH-  
ING 432 TUBES (2" DIA. X 20' LONG) WITH 1 1/2"  
WATER HOSE AND CLEANING "SMOKE" BOX UNDER AIR PRE-  
HEATER TUBES USING AIR HOSE AND SHOVEL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8352	CONNECT AND DISCONNECT HOSE TO BIBS	.04360	JOB	
2	PMMU-1-8012	UNWIND AND WIND HOSE SECTIONS	.03560	JOB	
3	PWG-14-IV	TURN VALVE ON AND OFF	.01692	JOB	
4	PMMU-1-8010	PUSH WATER HOSE IN AND PULL OUT OF 432 (2") TUBES 20' LONG	11.31860	JOB	
5	PMMU-1-8356	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.13600	JOB	
6	PMMU-1-8357	ENTER AND LEAVE "SMOKE" BOX	.01880	JOB	
7	PHV-2-I	HOSE 150 SF OF FLY ASH OUT OF "SMOKE" BOX	.18680 .09000	JOB JOB	
8	PWS-2-III	SHOVEL HARDENED FLY ASH OUT OF "SMOKE" BOX	.16576	JOB	
9	PWA-5-II	MATERIAL HANDLING	.10359	JOB	

VT-252 = 12.11547 HRS PER JOB

VT-253      CLEAN FIRESIDE OF AIR PREHEATER.-- INCLUDES WASHING 675 TUBES (2 1/2" DIA. X 30" LONG) WITH 1 1/2" WATER HOSE AND CLEANING "SMOKE" BOX UNDER AIR PREHEATER TUBES USING AIR HOSE AND SHOVEL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNUU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PNUU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PNQ-14-IV	TURN VALVE ON AND OFF	.01692	JOB	
4	PNUU-1-8010	PUSH WATER HOSE IN AND OUT OF 675 (2 1/2" DIA.) TUBES 30" LONG	17.68500	JCB	
5	PNUU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.17000	JOB	
6	PNUU-1-8557	ENTER AND LEAVE "SMOKE" BOX	.01880	JOB	
7	PNV-2-I	HOSE FLY ASH OUT OF "SMOKE" BOX * AVG. OF 250 SQ. FT.	.18680	JOB	
8	PNS-2-III	SHOVEL HARDENED FLY ASH OUT OF "SMOKE" BOX	.58016	JOB	
9	PNA-3-II	MATERIAL HANDLING	.20718	JOB	
10	PNQ-14-IV	TURN VALVE ON AND OFF	.01692	JOB	

VT-253 = 19.11097 HRS PER JOB

VT-254      CLEAN FIRESIDE OF AIR PREHEATER.--INCLUDES WASHING 1024 TUBES (2 1/2" DIA.X 30' LONG) WITH 1 1/2" WATER HOSE AND CLEANING "SMOKE" BOX UNDER AIR PREHEATER TUBES USING AIR HOSE AND SHOVEL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNUU-1-8552	CONNECT AND DISCONNECT HOSE BIBS	.04360	JOB	
2	PNUU-1-8012	UNWIND AND WIND HOSES	.03560	JOB	
3	PNQ-14-IV	TURN VALVE ON AND OFF	.03384	JOB	
4	PNUU-1-8010	PUSH WATER HOSE IN AND PULL OUT OF 1024 (2 1/2") TUBES 30' LONG	26.82880	JOB	
5	PNUU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.20400	JOB	
6	PNUU-1-8557	ENTER AND LEAVE "SMOKE" BOX	.01880	JOB	
7	PNV-2-I	HOSE FLY ASH OUT OF "SMOKE" BOX * AVG. OF 200 SQ. FT.	.18680	JOB	
8	PNS-2-III	SHOVEL HARDENED FLY ASH OUT OF "SMOKE" BOX	.49584	JOB	
9	PNA-3-II	MATERIAL HANDLING	.20718	JOB	

VT-254 = 28.13465 HRS PER JOB

VT-255

CLEAN FIRESIDE OF PRECIPITATOR.-- INCLUDES PUSHING AN AIR HOSE DOWN 36 TUBES (4" DIA. X 8' LONG) AND BLOWING OUT THE COMPARTMENT AT TOP OF TUBES.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
00	*****	*****	*****	*****	*****
1	PMQ-14-ZV	TURN VALVE ON AND OFF	.00866	JOB	
2	PMMU-1-8557	ENTER AND LEAVE PRECIPITATOR OPENING	.01880	JOB	
3	PMV-13-VII	PUSH AIR HOSE IN AND PULL OUT OF 36 (4") TUBES 8' TO 12' LONG	.19410	JOB	
4	PMV-2-I	BLOW CLEAN INSIDE PRECIPITATOR COMPARTMENT * AVG. OF 90 SQ. FT.	.18680	JOB	
5	PMMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.06800	JOB	
6	PMA-5-II	MATERIAL HANDLING.	.20718	JOB	

VT-255 = 1.77414 HRS PER JOB

VT-256

CLEAN SUPERHEATER HAVING 120 TUBES IN PASSES OVER LOWER DRUM USING SCRAPER, AND CLEAN HEADER BOX BY VACUUMING 250 SQ. FT. OF FINE FLY ASH.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
00	*****	*****	*****	*****	*****
1	PMV-2-I	VACUUM SUPERHEATER BOX CONTAINING 250 SF OBTAINABLE AREA	.18680	JOB	
2	PMMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES	.06800	JOB	
3	PMA-5-II	MATERIAL HANDLING	.20718	JOB	
4	PMMU-1-8557	ENTER AND LEAVE MANHOLE	.02820	JOB	
5	PMV-2-II	SCRAPE CLEAN SUPERHEATER TUBES IN PASS OVER LOWER DRUM	.02184	JOB	

VT-256 = 4.53758 HRS PER JOB

VT-257

CLEAN 8' LONG FIRE TUBES IN FIRE TUBE BOILER WITH SCRAPER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
00	*****	*****	*****	*****	*****
1	PMV-13-I	CLEAN BOILER TUBES 8' LONG WITH SCRAPER	.02408	JOB	

VT-257 = .02408 HRS PER JOB + .00880 HRS PER TUBE

VT-258      CLEAN 8' LONG FIRE TUBES IN FIRE TUBE BOILER WITH PNEUMATIC TURBINING TOOL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
20	PHV-13-VI	CLEAN BOILER TUBES 8' LONG WITH PNEUMATIC TURBINING TOOL	.19410	JOB	
1			.00960	TUBE	

VT-258 = .19410 HRS PER JOB + .00960 HRS PER TUBE

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VT-259      CLEAN 12' LGNG FIRE TUBES IN FIRE TUBE BOILER WITH SCRAPER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
20	PHV-13-VII	CLEAN BOILER TUBES 12' LONG WITH SCRAPER	.02408	JOB	
1			.01320	TUBE	

VT-259 = .02408 HRS PER JOB + .01320 HRS PER TUBE

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VT-260      CLEAN 12' LONG FIRE TUBES IN FIRE TUBE BOILER WITH PNEUMATIC TURBINING TOOL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
20	PHV-13-VII	CLEAN BOILER TUBES 12' LONG WITH PNEUMATIC TURBINING TOOL	.19410	JOB	
1			.01440	TUBE	

VT-260 = .19410 HRS PER JOB + .01440 HRS PER TUBE

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VT-261      CLEAN 16' LONG FIRE TUBES IN FIRE TUBE BOILER WITH SCRAPER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
20	PHV-13-III	CLEAN BOILER TUBES 16' LONG WITH SCRAPER	.02408	JOB	
1			.01760	TUBE	

VT-261 = .02408 HRS PER JOB + .01760 HRS PER TUBE

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VT-262      CLEAN 16' LONG FIRE TUBES IN FIRE TUBE BOILER WITH PNEUMATIC TURBINING TOOL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
20	PHV-13-VIII	CLEAN BOILER TUBES 16' LONG WITH PNEUMATIC TURBINING TOOL	.19410	JOB	
1			.01920	TUBE	

VT-262 = .19410 HRS PER JOB + .01920 HRS PER TUBE

VT-263            CLEAN 20" LONG FIRE TUBES IN FIRE TUBE BOILER WITH PNEUMATIC TURBINE TOOL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNV-13-IX	CLEAN BOILER TUBES 20" LONG WITH PNEUMATIC TURBINE TOOL.	.19410	JOB	
			.02400	TUBE	

VT-263 = .19410 HRS PER JOB + .02400 HRS PER TUBE

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VT-264            CLEAN (1) TUBE SHEET COMPARTMENT IN FIRE TUBE BOILER WITH VACUUM CLEANER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNV-13-IV	CLEAN TUBE SHEET COMPARTMENT	.74708	COMPARTMT	

VT-264 = .74708 HRS PER COMPARTMT

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VT-265            CLEAN FIRE BOX IN FIRE TUBE BOILER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNV-13-V	CLEAN FIRE BOX	.44148	JOB	

VT-265 = .44148 HRS PER JOB

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VT-266            CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER (1,205 LB./HR. OR 36 HP).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PNV-2-I	WASH INTERIOR OF DRUM	.18680	JOB	
			.24300	JOB	
2	4210	INSPECT DRUM	.30000	JOB	
3	PNV-11-IV	REMOVE MANHOLE COVER	.09723	JOB	
4	PNV-11-V	INSTALL MANHOLE COVER	.28614	JOB	
5	PWA-5-Z	MATERIAL HANDLING	.06906	JOB	

VT-266 = 1.10223 HRS PER JOB

VT-267      CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER (4,105 LB./HR. OR 125 HP).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-2-I	WASH INTERIOR OF DRUM	.18680	JOB	
			.61500	JOB	
2	4210	INSPECT DRUM	.37500	JOB	
3	PWV-11-IV	REMOVE MANHOLE COVER	.09723	JOB	
4	PWV-11-V	INSTALL MANHOLE COVER	.20614	JOB	
5	PWA-5-I	MATERIAL HANDLING	.06906	JOB	

VT-267 = 1.54923 HRS PER JOB

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VT-268      CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER(5,056 LB./HR. OR 175 HP).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-2-I	WASH INTERIOR OF DRUM	.18680	JOB	
			1.11360	JOB	
2	4210	INSPECT DRUM	.45000	JOB	
3	PWV-11-IV	REMOVE MANHOLE COVER	.09723	JOB	
4	PWV-11-V	INSTALL MANHOLE COVER	.20614	JOB	
5	PWA-5-I	MATERIAL HANDLING	.06906	JOB	

VT-268 = 2.12283 HRS PER JOB

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VT-269      CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER (6,696 LB./HR. OR 200 HP).

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-2-I	WASH INTERIOR OF DRUM	.18680	JOB	
			1.56860	JOB	
2	4210	INSPECT DRUM	.92500	JOB	
3	PWV-11-IV	REMOVE MANHOLE COVER	.09723	JOB	
4	PWV-11-V	INSTALL MANHOLE COVER	.20614	JOB	
5	PWA-5-I	MATERIAL HANDLING	.10359	JOB	

VT-269 = 2.66736 HRS PER JOB

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VT-270      REMOVE BOILER TUBE (UP TO 4" O.D. X 20' LONG) THROUGH MANHOLE OR MANHOLE (WITHOUT CUTTING INTO SECTIONS) AND INSTALL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-15-IV	REMOVE BOILER TUBE UP TO 20' LONG AND 4" O.D. THROUGH MANHOLE/MANHOLE WITHOUT CUTTING TUBE INTO SECTIONS	.28186	TUBE	
2	PWV-15-V	INSTALL BOILER TUBE UP TO 20' LONG AND 4" O.D.	.61214	TUBE	

VT-270 = .89400 HRS PER TUBE

VT-271 REMOVE BOILER TUBE (UP TO 4" O.D. X 20' LONG) THROUGH MANHOLE (CUTTING INTO SECTIONS) AND INSTALL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-15-III	REMOVE BOILER TUBE UP TO 20' LONG AND 4" O.D. THROUGH MANHOLE BY CUTTING INTO SMALLER PIECES	.32211	TUBE	
2	PHV-15-V	INSTALL BOILER TUBE UP TO 20' LONG AND 4" O.D.	.61214	TUBE	
VT-271 *		.93425 HRS PER TUBE			

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VT-272 REMOVE AND INSTALL BOILER TUBE (UP TO 4" O.D. X 20' LONG) THROUGH OWN HOLE.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-15-II	REMOVE BOILER TUBE UP TO 20' LONG AND 4" O.D. THROUGH OWN HOLE	.40156	TUBE	
2	PHV-15-V	INSTALL BOILER TUBE UP TO 20' LONG AND 4" O.D. THRU OWN HOLE	.61214	TUBE	
VT-272 *		1.01370 HRS PER TUBE			

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VT-273 REMOVE AIR PREHEATER TUBE (WITHOUT CUTTING INTO SECTIONS) AND INSTALL.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-15-IV	REMOVE BOILER TUBE UP TO 20' LONG AND 4" O.D. WITHOUT CUTTING INTO SECTIONS	.28186	JOB	
2	PHV-15-VII	INSTALL AIR PREHEATER TUBE UP TO 20' LONG AND 4" O.D. USING MOIST	.64270	JOB	
VT-273 *		.92456 HRS PER JOB			

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VT-274 REMOVE AND INSTALL TUBE SHEET COMPARTMENT DOOR AND DOOR FRAME.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-15-I	REMOVE AND INSTALL TUBE SHEET COMPARTMENT DOOR AND DOOR FRAME	.80609	JOB	
VT-274 *		.80508 HRS PER JOB			

VT-275            INSTALL BOILER TUBE (UP TO 4" O.D. X 20' LONG)  
USING HOIST.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWV-15-VI	INSTALL BOILER TUBE UP TO 20' LONG AND 4" O.D. USING HOIST	.71638	JOB	

VT-275 = .71638 HRS PER JOB

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VT-276            REMOVE AND INSTALL PUSH NIPPLES ON A CAST IRON LOW  
PRESSURE SECTIONAL BOILER.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWQ-14-IV	OPEN AND CLOSE SMALL VALVE	.11844	JOB	
2	PWQ-14-IV	OPEN AND CLOSE SMALL VALVE	.11844	JOB	
3	PWMU-1-8552	REMOVE AND INSTALL FLANGE NUT	.78480	JOB	
4	PWMU-1-8552	REMOVE AND INSTALL FLANGE BOLT	.78480	JOB	
5	PWMU-1-8013	REMOVE AND INSTALL GASKET	.32360	JOB	
6	PWQ-6-VI	REMOVE AND INSTALL UNION	.49744	JOB	
7	PWQ-6-I	REMOVE AND INSTALL PIPE SECTIONS LESS THAN 2" LONG	.43836	JOB	
8	PWMU-1-8552	REMOVE AND INSTALL CRAW NUT	.08720	JOB	
9	PWMU-1-8552	REMOVE AND INSTALL CRAW BOLT	.08720	JOB	
10	PWN-10-IX	REMOVE AND INSTALL BOILER SECTION	.00332	JOB	
11	PWMU-1-8021	REMOVE AND INSTALL NIPPLE	.14700	JOB	

VT-276 = 2.39039 HRS PER JOB

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VT-277            CLEAN AND INSPECT UNIT HEATER IN PLACE.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8558	CLIMB UP AND DOWN SCAFFOLD	.05680	JOB	
2	PWQ-14-II	MOVE SCAFFOLD	.00992	JOB	
			.00935	JOB	
3	PWMU-1-9000	REMOVE AND INSTALL SCREW	.17800	JOB	
4	PWMU-1-8021	REMOVE AND INSTALL PANEL	.04900	JOB	
5	PWS-60-II	LUBRICATE MOTOR	.01172	JOB	
6	PWMU-1-8028	CLEAN MOTOR	.08440	JOB	
7	PWMU-1-8028	WIRE BRUSH COILS	.08440	JOB	
8	PWMU-1-8028	CLEAN HOUSING	.08440	JOB	
9	6202	INSPECT FOR LEAKS	.01200	JOB	

VT-277 = .57999 HRS PER JOB

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V30
1	PWB-6-II	LOWER AND RAISE UNIT WITH BLOCK AND TACKLE	.64368	JOB	
2	PWB-4-II	LASH AND UNLASH UNIT	.20584	JOB	
3	PWLU-1-8552	REMOVE AND INSTALL MOUNTING NUTS	.08720	JOB	
4	PWLU-1-8552	REMOVE AND INSTALL MOUNTING BOLTS	.08720	JOB	
5	PWG-6-VI	REMOVE AND INSTALL UNION	.24972	JOB	
6	PWG-6-VI	REMOVE AND INSTALL VALVE	.06218	JOB	
7	PWG-6-VI	REMOVE AND INSTALL NIPPLE	.12435	JOB	
8	PWG-6-VI	REMOVE AND INSTALL STRAINER	.06218	JOB	
9	PWA-14-II	OPEN AND CLOSE VALVE	.01692	JOB	
10	PWA-5-II	POSITION UNIT	.20719	JOB	
11	PWLU-1-8558	CLIMB UP AND DOWN SCAFFOLD	.11360	JOB	
12	PWG-14-II	MOVE SCAFFOLD	.00992	JOB	
			.01122	JOB	
13	PWLU-1-8552	REMOVE AND INSTALL BOLT	.09910	JOB	
14	PWLU-1-8000	REMOVE AND INSTALL SCREW	.17800	JOB	
15	PWLU-1-8023	REMOVE AND INSTALL PANEL	.06903	JOB	
16	PWG-60-II	LUBRICATE MOTOR	.01172	JOB	
17	PWLU-1-8031	CLEAN MOTOR	.13700	JOB	
18	PWLU-1-8028	WIRE BRUSH COILS	.08440	JOB	
19	PWLU-1-8031	CLEAN HOUSING	.13700	JOB	
20	4211	INSPECT FOR LEAKS	.29200	JOB	
21	PWA-5-II	MATERIAL HANDLING	.61436	JOB	

VT-278 • 3.28157 HRS PER JOB

VT-279 REMOVE OLD UNIT HEATER AND INSTALL NEW.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V39
1	PWB-6-II	LOWER AND RAISE UNIT WITH BLOCK AND TACKLE	.64368	HEATER	
2	PWB-6-II	LASH AND UNLASH UNIT	.20584	HEATER	
3	PWU-1-8552	REMOVE AND INSTALL MOUNTING NUTS	.08720	HEATER	
4	PWU-1-8552	REMOVE AND INSTALL MOUNTING BOLTS	.08720	HEATER	
5	PWQ-6-VI	REMOVE AND INSTALL UNION	.24872	HEATER	
6	PWQ-6-VI	REMOVE AND INSTALL VALVE	.06218	HEATER	
7	PWQ-6-VI	REMOVE AND INSTALL NIPPLE	.12436	HEATER	
8	PWQ-6-VI	REMOVE AND INSTALL STRAINER	.06218	HEATER	
9	PWQ-16-IV	OPEN AND CLOSE VALVE	.01692	HEATER	
10	PWA-5-II	POSITION UNIT	.20718	HEATER	
11	PWU-1-8558	CLIMB UP AND DOWN SCAFFOLD	.11360	HEATER	
12	PWQ-16-II	MOVE SCAFFOLD	.30992	HEATER	
			.30935	HEATER	
13	4211	INSPECT FOR LEAKS	.29100	HEATER	
14	PWEA-52-I	LAY OUT STOCK FOR HANGER	.80160	HEATER	
15	PWQ-2-I	CUT STOCK FOR HANGER	.14868	HEATER	
16	PWC-19-III	DRILL HOLES	.03080	HEATER	
			.10140	HEATER	
17	PWU-1-8021	INSTALL HANGERS	.09200	HEATER	
18	PWA-5-II	MATERIAL HANDLING	.61636	HEATER	
VT-279 =		3.76304 HRS PER HEATER			

VT-280 REMOVE, DISASSEMBLE, CLEAN, INSPECT, TEST, REPAIR, ASSEMBLE, AND INSTALL ANY SIZE UNIT HEATER. INCLUDES REPAIR AN AVERAGE OF TWO LEAKS. USE OF SCAFFOLDING IS INCLUDED BUT ERECTION AND DISMANTLING IS NOT.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWB-8-II	LOWER AND RAISE UNIT WITH BLOCK AND TACKLE	.66348	JOB	
2	PWB-4-I	LASH AND UNLASH UNIT	.20584	JOB	
3	PWU-1-8532	REMOVE AND INSTALL MOUNTING NUTS	.08720	JOB	
4	PWU-1-8532	REMOVE AND INSTALL MOUNTING BOLTS	.08720	JOB	
5	PWQ-4-VI	REMOVE AND INSTALL UNION	.24872	JOB	
6	PWQ-4-VI	REMOVE AND INSTALL VALVE	.06218	JOB	
7	PWQ-4-VI	REMOVE AND INSTALL NIPPLE	.12436	JOB	
8	PWG-4-VI	REMOVE AND INSTALL STRAINER	.06218	JOB	
9	PWQ-14-IV	OPEN AND CLOSE VALVE	.01692	JOB	
10	PWA-5-II	POSITION UNIT	.20718	JOB	
11	PWU-1-8538	CLIMB UP AND DOWN SCAFFOLD	.11360	JOB	
12	PWQ-14-II	MOVE SCAFFOLDING	.00992	JOB	
13	PWU-1-8532	REMOVE AND INSTALL BOLTS	.08720	JOB	
14	PWU-1-8000	REMOVE AND INSTALL SCREWS	.17800	JOB	
15	PWU-1-8011	REMOVE AND INSTALL PANEL	.07320	JOB	
16	PWU-1-8011	REMOVE AND INSTALL MOTOR SUPPORT	.07320	JOB	
17	PWU-1-8022	REMOVE AND INSTALL MOTOR AND FAN	.20560	JOB	
18	PWG-4C-II	LUBRICATE MOTOR	.03172	JOB	
19	PWU-1-8031	CLEAN MOTOR	.13700	JOB	
20	PWU-1-9028	WIRE BRUSH COILS	.16880	JOB	
21	PWU-1-8026	CLEAN SMALL PARTS	.16600	JOB	
22	PWU-1-8031	CLEAN HOUSING	.13700	JOB	
23	PWQ-4-I	REMOVE AND INSTALL FITTING	.24412	JOB	
24	PWQ-4-I	CONNECT AND DISCONNECT TEST LINES	.07306	JOB	
25	PWQ-14-IV	TURN STEAM ON AND OFF	.02530	JOB	
26	PWQ-4-VI	REMOVE AND INSTALL NIPPLE	.24872	JOB	
27	PWQ-4-VI	REMOVE AND INSTALL REDUCER	.12639	JOB	
28	PWQ-4-VI	REMOVE AND INSTALL ELBOW	.12436	JOB	
29	4205	INSPECT FOR LEAKS DURING REPAIR	.16900	JOB	
30	4211	INSPECT FOR LEAKS AFTER REPAIR	.29200	JOB	
31	PWEA-6-VI	SOLDER LEAKS IN ANY SIZE HEATING UNIT PIPES AS REQUIRED	.16060	JOB	
32	PWU-1-8026	CLEAN AREA AROUND LEAKS	.03280	JOB	
33	PWQ-17-Z	CUT OFF SECTION OF PIPE	.16857	JOB	
34	PWEA-6-VI	SEAL ENDS OF PIPE	.16069	JOB	
35	PWA-5-II	MATERIAL HANDLING	.41436	JOB	

VT-220 = 5.39497 HRS PER JOB

VT-281      INSTALL GAS OR OIL-FIRED WALL-TYPE FURNACE.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWA-5-II	MATERIAL HANDLING	.10359	JOB	
2	PWNU-1-8022	POSITION FURNACE	.10280	JOB	
3	PWQ-4-VI	CONNECT UNION	.03109	JOB	
4	PWNU-1-8010	INSTALL GRILLS AND PANELS	.05240	JOB	
5	PWNU-1-8000	INSTALL FASTENER	.05340	JOB	
6	4209	CHECK OPERATION	.16700	JOB	
7	PWQ-14-IV	TURN VALVE ON AND OFF	.00846	JOB	
8	PWNU-1-8021	CONNECT VENT STACK	.02450	JOB	
9	PWNU-1-8000	INSTALL SCREWS	.01780	JOB	

VT-281 = .56104 HRS PER JOB

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VT-282      CLEAN ONE GAS-FILLED WALL FURNACE.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWQ-14-I	TURN VALVE OFF AND ON	.01270	JOB	
2	PWQ-4-VI	DISCONNECT AND CONNECT UNION	.06218	JOB	
3	PWNU-1-8010	REMOVE AND INSTALL PANEL AND GRILL	.10480	JOB	
4	PWNU-1-8000	REMOVE AND INSTALL FASTENER	.10680	JOB	
5	PWNU-1-8031	CLEAN FURNACE AND WALL OPENINGS	.13700	JOB	
6	4209	CHECK OPERATION	.16700	JOB	

VT-282 = .59068 HRS PER JOB

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VT-283      REMOVE AND INSTALL GAS OR OIL FIRED WALL FURNACE

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWA-5-II	MATERIAL HANDLING	.20718	JOB	
2	PWQ-14-IV	TURN VALVE ON AND OFF	.00846	JOB	
3	PWQ-4-VI	DISCONNECT AND CONNECT UNION	.06218	JOB	
4	PWNU-1-8013	REMOVE AND INSTALL PANEL AND GRILL	.18480	JOB	
5	PWNU-1-8000	REMOVE AND INSTALL FASTENERS	.10680	JOB	
6	PWNU-1-8022	REMOVE AND INSTALL FURNACE	.20560	JOB	
7	4211	CHECK OPERATION	.29200	JOB	

VT-283 = 1.06702 HRS PER JOB

VT-284      INSTALL NEW UNIT HEATER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PW2-5-II	Raise unit with block and tackle	.32176	JOB	
2	PW2-4-I	Lash and unlash unit	.10292	JOB	
3	PWMU-1-E552	Install mounting bolts	.04360	JOB	
4	PWMU-1-S552	Install mounting nuts	.04352	JOB	
5	PW2-4-VI	Install union	.12436	JOB	
6	PW2-4-VI	Install valve	.06219	JOB	
7	PW2-4-VI	Install nipple	.06219	JOB	
8	PW2-4-VI	Install strainer	.03109	JOB	
9	PW2-16-IV	CPEV valve	.00845	JOB	
10	PW2-5-II	Position unit	.23301	JOB	
11	PWMU-1-3558	Climb up and down scaffold	.04260	JOB	
12	PWQ-14-II	Move scaffold	.00392	JOB	
			.01122	JOB	
13	PWEA-52-I	Lay out stock for hanger	.80160	JOB	
14	PWQ-2-I	Cut stock for hangers	.14858	JOB	
15	PWG-15-III	Drill holes	.03080	JOB	
			.10148	JOB	
16	PWMU-1-8021	Install hangers	.09800	JOB	
17	4211	Inspect for leaks	.29200	JOB	
18	PWA-5-II	MATERIAL HANDLING	.20719	JOB	

VT-284 = 2.77661 HRS PER JOB

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VT-285      CLEAN ONE OIL-FIRED FORCED HOT AIR WALL FURNACE.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V28
1	PWQ-14-IV	Open and close valve	.00846	JOB	
2	PWQ-20-II	Drain oil	.03040	JOB	
3	PWMU-1-8000	Remove and install fasteners	.07120	JOB	
4	PWQ-4-VI	Disconnect and connect	.06218	JOB	
5	PWMU-1-8021	Remove and install burner	.04900	JOB	
6	PWMU-1-8013	Disassemble and assemble burner parts	.13480	JOB	
7	PWMU-1-8026	Clean parts	.04920	JOB	
8	PWMU-1-8030	Clean burner	.06790	JOB	
9	PWMU-1-8030	Clean pipes	.06790	JOB	
10	PWMU-1-8030	Clean hot air duct	.06790	JOB	
11	PWMU-1-8013	Remove and install filter	.04620	JOB	
12	5600	Light burner and adjust flame	.01300	JOB	
13	PWMU-1-8027	Clean motor	.03590	JOB	
14	PWG-40-II	Lubricate motor	.01172	JOB	
15	4209	Check and inspect	.16700	JOB	

VT-285 = .93276 HRS PER JOB

VT-296      DISASSEMBLE, CLEAN, INSPECT AND ASSEMBLE APARTMENT SIZE OIL-FIRED SPACE HEATER (2 1/2" X 2 1/2" X 4") OR OIL-FIRED FLOOR FURNACE.-- DOES NOT INCLUDE CLEANING CHIMNEY OR CARBURETOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8010	REMOVE AND INSTALL Baffles	.02620	JOB	
2	PMMU-1-8027	CLEAN INSIDE HEATER	.10770	JOB	
3	PMMU-1-8027	CLEAN OUTSIDE HEATER	.07180	JOB	
4	PNG-14-IV	TURN OIL TANK VALVE OFF AND ON	.03384	JOB	
5	PMMU-1-8552	DISCONNECT AND CONNECT OIL LINE TO FILTER	.02180	JOB	
6	PMMU-1-8552	REMOVE AND INSTALL NUT ON FILTER CONTAINER	.02180	JOB	
7	PMMU-1-8026	CLEAN FILTER	.01640	JOB	
8	PMMU-1-9000	REMOVE AND INSTALL SCREWS ON CARBURETOR TOP	.07120	JOB	
9	PMMU-1-8552	REMOVE AND INSTALL OIL LINE FROM HEATER TO CARBURETOR	.04360	JOB	
10	PMMU-1-8552	REMOVE AND INSTALL STRAINER	.02180	JOB	
11	4208	CHECK AND INSPECT	.04200	JOB	
12	PWA-3-I	MATERIAL HANDLING	.06906	JOB	

VT-296 = .56720 HRS PER JOB

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VT-297      DISASSEMBLE, CLEAN, INSPECT AND ASSEMBLE APARTMENT SIZE OIL-FIRED SPACE HEATER (2 1/2" X 2 1/2" X 4") OR OIL-FIRED FLOOR FURNACE.--INCLUDES CLEANING CHIMNEY AND CARBURETOR.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PMMU-1-8050	REMOVAL AND INSTALL SCREW IN PIPE	.03560	JOB	
2	PMMU-1-8011	REMOVE AND INSTALL PIPE FROM HEATER TO CHIMNEY	.07320	JOB	
3	PWA-3-II	CARRY PIPE TO BE CLEANED AND RETURN	.10350	JOB	
4	PMMU-1-8027	CLEAN PIPE	.07180	JOB	
5	PMMU-1-8052	CLIMB UP AND DOWN LADDER	.06143	JOB	
6	PMMU-1-8027	CLEAN CHIMNEY	.07180	JOB	
7	PMMU-1-8010	REMOVE AND INSTALL Baffles	.02620	JOB	
8	PMMU-1-8027	CLEAN INSIDE HEATER	.10770	JOB	
9	PMMU-1-8027	CLEAN OUTSIDE HEATER	.07180	JOB	
10	PNG-14-IV	TURN OIL TANK VALVE OFF AND ON	.03384	JOB	
11	PMMU-1-8552	DISCONNECT AND CONNECT OIL LINE TO FILTER	.02180	JOB	
12	PMMU-1-8552	REMOVE AND INSTALL NUT ON FILTER CONTAINER	.02180	JOB	
13	PMMU-1-8026	CLEAN FILTER	.01640	JOB	
14	PMMU-1-9000	REMOVE AND INSTALL FOUR SCREWS ON CARBURETOR TOP	.07120	JOB	
15	PMMU-1-8552	REMOVE AND INSTALL OIL LINE FROM HEATER TO CARBURETOR	.04360	JOB	
16	PMMU-1-8552	REMOVE AND INSTALL STRAINER	.02180	JOB	
17	PMMU-1-8552	REMOVE AND INSTALL OIL LINE FROM HEATER TO OIL STORAGE	.02180	JOB	
18	4208	CHECK AND INSPECT	.04200	JOB	
19	PWA-3-I	MATERIAL HANDLING	.06906	JOB	

VT-297 = .96639 HRS PER JOB

VT-288      INSTALL 30-GALLON GAS-FIRED HOT WATER HEATER AND  
FILL TANK.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWA-5-II	MATERIAL HANDLING	.10359	JOB	
2	PHMU-1-8022	POSITION HEATER	.10280	JOB	
3	PHQ-4-VI	CONNECT UNIONNS	.09327	JOB	
4	4209	CHECK OPERATION	.16700	JOB	
5	PHQ-14-IV	TURN VALVE ON AND OFF	.00846	JOB	
6	PHMU-1-8021	CONNECT VENT STACK	.02450	JOB	
7	PHMU-1-8000	ATTACH SCREWS	.01780	JOB	
8	2147	FILL TANK	.08100	JOB	
VT-288 *		.59842 HRS PER JOB			

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VT-289      REMOVE AND INSTALL 30-GALLON GAS-FIRED HOT WATER  
HEATER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWA-5-II	MATERIAL HANDLING	.20718	JOB	
2	PHQ-4-VI	DISCONNECT AND CONNECT UNION	.18654	JOB	
3	PHMU-1-8022	REMOVE AND INSTALL HEATER	.20560	JOB	
4	PHQ-14-IV	TURN VALVE ON AND OFF	.00846	JOB	
5	PHQ-20-II	DRAIN AND FILL 30-GALLON TANK	.45600	JOB	
6	4209	CHECK OPERATION	.16700	JOB	
VT-289 *		1.23078 HRS PER JOB			

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VT-290      CLEAN 30-GALLON GAS-FIRED HOT WATER HEATER

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHJ-14-IV	CLOSE AND OPEN VALVE	.00846	JOB	
2	PHMU-1-8030	CLEAN AND ADJUST MAIN BURNER, PILOT AND THERMO-COUPLE	.20370	JOB	
3	PHMU-1-8027	CLEAN COMBUSTION CHAMBER AND BOTTOM OF TANK	.03590	JOB	
4	PHJ-20-II	FLUSH OUT HEATER	.45600	JOB	
5	4208	CHECK OPERATION OF SAFETY PILOT	.04200	JOB	
6	5600	LIGHT MAIN BURNER AND ADJUST FLAME	.01300	JOB	
7	4210	ASCERTAIN THAT HEATER CUTS OFF AT CORRECT TEMPERATURE	.07500	JOB	
8	4208	CHECK OPERATION OF RELIEF VALVE	.04200	JOB	
VT-290 *		.87606 HRS PER JOB			

VT-291 DISASSEMBLE, CLEAN, LUBRICATE, INSPECT, AND REASSEMBLE APARTMENT SIZE GAS UNIT HEATER (2 1/2" X 2 1/2" X 5"). INCLUDES CLEANNING CHIMNEY.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8005	DISCONNECT AND CONNECT ELECTRIC PLUG FROM RECEPTACLE	.00400	JOB	
2	PWMU-1-8013	REMOVE AND INSTALL TOP FRONT COVER	.04620	JOB	
3	PWMU-1-8006	TURN GAS VALVE OFF AND ON	.01340	JOB	
4	PWMU-1-8000	REMOVE AND INSTALL SCREWS	.03560	JOB	
5	PWMU-1-8010	REMOVE BOTTOM FRONT COVER	.01310	JOB	
6	PWMU-1-8005	REMOVE AND INSTALL FILTER	.00400	JOB	
7	PWMU-1-8000	DISCONNECT AND CONNECT THERMALCOUPLING AT MAIN LINE	.01780	JOB	
8	PWMU-1-8000	DISCONNECT AND CONNECT PILOT COUPLING AT MAIN LINE	.01780	JOB	
9	PWMU-1-8000	REMOVE AND INSTALL SCREWS TO PILOT LIGHT ASSEMBLY	.03560	JOB	
10	PWMU-1-8010	REMOVE AND INSTALL PILOT LIGHT ASSEMBLY	.02620	JOB	
11	PWMU-1-8000	LOOSEN AND TIGHTEN TWO THUMS SCREWS	.03560	JOB	
12	PWMU-1-8010	REMOVE AND INSTALL BURNERS	.05240	JOB	
13	PWMU-1-8030	KNOCK SOOT FROM SIDE WALLS	.06790	JOB	
14	PWMU-1-8030	VACUUM AND WIPE UNIT	.06790	JOB	
15	PNG-40-II	OIL MOTOR AND FAN	.02344	JOB	
16	PWMU-1-8000	DISCONNECT AND CONNECT SOLENOID VALVE NUT	.01780	JOB	
17	PWMU-1-8005	REMOVE AND INSTALL VALVE FROM SOLENOID	.00400	JOB	
18	PWMU-1-8026	CLEAN VALVE AND WIPE WITH OIL	.01640	JOB	
19	PWMU-1-8000	REMOVE AND INSTALL PILOT LINE	.01780	JOB	
20	PWMU-1-8000	REMOVE AND INSTALL FITTING TO PILOT LIGHT NOZZLE	.01780	JOB	
21	PWMU-1-8026	CLEAN NOZZLE	.01640	JOB	
22	PWMU-1-8010	REPLACE BOTTOM FRONT COVER	.01310	JOB	
23	5600	LIGHT PILOT AND ADJUST	.01300	JOB	
24	4209	TURN ON BURNERS AND CHECK FOR FAN TO COME ON	.16700	JOB	

VT-291 = .74423 HRS PER JOB

VT-292                    CLEAN, INSPECT AND LUBRICATE COLD WATER BLOWER  
UNIT WITH 2-CENTRIFUGAL (SQUIRREL CAGE) FANS  
(6" DIA.).  
--INCLUDES DISASSEMBLE AND ASSEMBLE; VACUUM AND  
WIPE INSIDE UNIT AND BLOWER ASSEMBLY; INSPECT; AND  
LUBRICATE BLOWER BEARINGS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-3000	REMOVE AND INSTALL SCREWS	.03560	JOB	
2	PWMU-1-8021	REMOVE AND INSTALL FRONT COVER	.04900	JOB	
3	PWMU-1-8005	DISCONNECT AND CONNECT ELECTRIC PLUG FROM RECEPTACLE	.00400	JOB	
4	PWMU-1-8552	REMOVE AND INSTALL MOUNTING BOLTS AND NUTS	.08720	JOB	
5	PWMU-1-9021	REMOVE AND INSTALL FRAME AND BLOWER ASSEMBLY	.04900	JOB	
6	PWMU-1-8012	REMOVE AND INSTALL FILTER	.01790	JOB	
7	PWMU-1-9027	VACUUM AND WIPE INSIDE UNIT	.03590	JOB	
8	PWMU-1-8030	VACUUM AND WIPE BLOWER ASSEMBLY	.06790	JOB	
9	PNG-40-II	LUBRICATE BLOWER	.01172	JOB	

VT-292 = .35612 HRS PER JOB

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VT-293                    CLEAN, INSPECT, ADJUST AND LUBRICATE BLOWER UNIT  
WITH 4-CENTRIFUGAL (SQUIRREL CAGE) FANS (8" DIA.).  
--INCLUDES DISASSEMBLE AND ASSEMBLE; VACUUM AND  
WIPE INSIDE UNIT, BLOWER AND COVERS; INSPECT; MAKE  
ADJUSTMENTS; LUBRICATE MOVING PARTS.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8000	REMOVE AND INSTALL SCREWS	.03340	JOB	
2	PWMU-1-8021	REMOVE AND INSTALL FRONT COVER	.04900	JOB	
3	PWMU-1-8005	TURN MOTOR OFF AND ON WITH KEY	.00400	JOB	
4	PWMU-1-8000	LOOSEN AND TIGHTEN SCREWS	.07120	JOB	
5	PWMU-1-8010	REMOVE AND INSTALL COVER PLATES	.05240	JOB	
6	PWMU-1-8552	REMOVE AND INSTALL THUMB SCREWS TO TOP COVER	.08720	JOB	
7	PWMU-1-8021	REMOVE AND INSTALL TOP COVER	.04900	JOB	
8	PWMU-1-8005	REMOVE AND INSTALL ELECTRIC PLUG FROM RECEPTACLE	.00400	JOB	
9	PWMU-1-8000	REMOVE AND INSTALL NUTS AND BOLTS ON BLOWER UNIT	.07120	JOB	
10	PWMU-1-8011	REMOVE AND INSTALL BLOWER UNIT	.16640	JOB	
11	2581	INSPECT BLOWER, ALL MOVING PARTS AND SURROUNDING AREA	.00664	JOB	
12	PWMU-1-8000	REMOVE AND INSTALL TWO BRACKET SCREWS	.03560	JOB	
13	PWMU-1-8012	TURN MOTOR TO OIL AND RETURN	.01780	JOB	
14	PWMU-1-8000	REMOVE AND INSTALL TWO OIL PLUG COVER SCREWS	.03560	JOB	
15	PNG-40-II	OIL MOTOR AT TWO LOCATIONS	.01172	JOB	
16	PWMU-1-8012	REMOVE AND INSTALL BOTTOM FILTER	.01780	JOB	
17	PWMU-1-8000	REMOVE AND INSTALL 3 THUMB SCREWS TO OUTSIDE VENT	.01780	JOB	
18	PWMU-1-8013	REMOVE AND INSTALL PLATE TO VENT	.04620	JOB	
19	PWMU-1-8013	REMOVE AND INSTALL FILTER TO OUTSIDE VENT	.04620	JOB	
20	PWMU-1-8028	VACUUM AND WIPE INSIDE UNIT, BLOWER, AND COVERS	.08440	JOB	
21	PWN-3-I	OIL DAMPER AND MOVING PARTS	.00354	JOB	
			.02392	JOB	

VT-293 = .93261 HRS PER JOB

VT-294 REGULATE ROOF AND BLOWER UNIT THERMOSTAT.

NC	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PWMU-1-8000	REMOVE AND INSTALL SCREWS IN THERMOSTAT COVER TO REMOVE COVER	.03560	JOB	
2	PWMU-1-8005	REMOVE AND INSTALL THERMOSTAT COVER	.00400	JOB	
3	PWMU-1-9000	REMOVE AND INSTALL COVER SCREW TO NEEDLE VALVE	.01780	JOB	
4	PWMU-1-9006	OPEN AND CLOSE NEEDLE VALVE	.01340	JOB	
5	PWMU-1-8552	INSTALL AND REMOVE BRANCH LINE AIR GAUGE	.02180	JOB	
6	PWMU-1-8553	ADJUST THERMOSTAT	.30870	JOB	
7	PWMU-1-8000	REMOVE AND INSTALL PIN VALVE SET SCREW	.01780	JOB	
8	PWMU-1-8006	ADJUST SET SCREW	.00670	JOB	
9	PWMU-1-8010	REMOVE PIN VALVE GAUGE	.01310	JOB	
10	PWMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING CUTIES	.00850	JOB	
11	PWMU-1-R000	REMOVE AND INSTALL SCREWS IN COVER * AVG. OF TWO SCREWS	.03560	JOB	
12	PWMU-1-8010	REMOVE AND INSTALL COVER PLATE	.02620	JOB	
13	PWMU-1-9000	REMOVE AND INSTALL SCREWS TO REHEAT AND VENTILATING THERMOSTAT * AVG OF TWO SCREWS	.03560	JOB	
14	PWMU-1-8010	REMOVE AND INSTALL THERMOSTAT COVER	.02620	JOB	
15	PWMU-1-8000	REMOVE AND INSTALL SCREW IN FILTER LINE	.01780	JOB	
16	PWMU-1-8013	REMOVE AND INSTALL AIR GAUGE IN LINE	.04620	JOB	
17	9600	BLEED AIR LINE DOWN	.31300	JOB	
18	PWMU-1-9006	ADJUST GAGE	.00670	JOB	
19	3955	WAIT FOR UNIT TO COOL	.20000	JOB	
20	PWPM-55-707	PLACE THERMOSTAT ON TOP OF UNIT AND READ	.11656	JOB	
21	PWMU-1-8006	ADJUST UNIT BY TURNING SCREW	.00570	JOB	
22	3955	WAIT FOR UNIT TO COOL	.20000	JOB	
23	PWPM-55-707	PLACE THERMOSTAT ON TOP OF UNIT AND READ	.11656	JOB	
24	PWMU-1-8556	WALK AROUND WORK AREA AND EQUIPMENT PERFORMING CUTIES	.00850	JOB	

VT-294 = 1.00302 MRS PER JOB

VT-295            HOT AIR FURNACE, GUM TYPE, (UP TO 770,000 B.T.U.)  
--OFF-SEASON MAINTENANCE

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-9-I	CLEAN FUEL OIL, RENEW ELEMENT AND GASKET	.07584	FURNACE	
2	PHV-9-II	CLEAN, INSPECT, ADJUST ELECTRODE/MOZZLE ASSEMBLY	.17254	FURNACE	
3	PHV-9-III	SERVICE FUEL UNIT - - INCLUDES FUEL OIL PUMP, FORCED DRAFT BLOWER AND MOTOR	.16876	FURNACE	
4	PHV-9-IV	SERVICE FURNACE FIREBOX AND FLUE	.41103	FURNACE	
5	PHV-9-V	SERVICE FURNACE STACK SWITCH	.08928	FURNACE	
6	PHV-9-VI	SERVICE AIR CIRCULATION FAN AND MOTOR - - UP TO 1 HP	.20958	FURNACE	
7	PHV-9-VII	CONDUCT FURNACE OPERATIONAL CHECK	.11021	FURNACE	

VT-295 \* 1.23804 HRS PER FURNACE

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VT-296            ANALYZE SAMPLES OF BOILER WATER FROM FIRE TUBE  
BOILERS THAT ARE TREATED WITH CHEMICALS.  
\* AN AVG. OF 3-BOILER SAMPLES ARE ANALYZED DAILY.

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	PHV-6-I	LAY OUT AND RETURN TO STORAGE REQUIRED EQUIPMENT	.00422	BOILER	
2	PHV-6-II	SET UP PRELIMINARY EQUIPMENT FOR TEST	.00166	BOILER	
3	PHV-6-III	SET UP AND SECURE SOLU-BRIDGE GAUGE	.00081	BOILER	
4	PHV-6-IV	PREPARE DILUTED STANNOUS CHLORIDE SOLUTION	.00673	BOILER	
5	PHV-6-V	FILL USABLE SIZE CONTAINERS WITH CONTENTS FROM LARGE CONTAINER	.02141	BOILER	
6	PHV-6-VI	PERFORM TEST TO DETERMINE SOLID CONTENT OF SAMPLE	.03409	BOILER	
7	PHV-6-VII	PERFORM TEST TO DETERMINE PHOSPHATE CONTENT OF SAMPLE	.08863	BOILER	
8	PHV-6-VIII	PERFORM TEST TO DETERMINE TANNIN CONTENT OF SAMPLE	.04250	BOILER	
9	PHV-6-IX	PERFORM TEST TO DETERMINE PRESENCE OF CAUSTICITY IN SAMPLE	.05569	BOILER	
10	PHV-6-X	WASH FRAGILE EQUIPMENT USED IN ANALYZING BOILER WATER SAMPLES AND CLEAN UP WORK AREA, COUNTER, AND SINK	.00944	BOILER	
11	PHV-6-XI	PREPARE BOILER WATER SAMPLES TO MAIL TO LABORATORY 1-TIME PER MONTH	.00037	BOILER	

VT-296 \* .67255 HRS PER BOILER

VT-297            CLEAN FUEL OIL FILTER: RENEW ELEMENT AND GASKET

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3842	WALK AROUND WORK AREA	.00300	FILTER	
2	2070	CLOSE/CHECK CLOSED FUEL OIL SHUT-OFF VALVE AND OPEN	.00630	FILTER	
3	2301	OBTAIN AND ASIDE WIPING CLOTH	.00320	FILTER	
4	PWMU-1-8000	UNCOPLE AND ASSEMBLE FILTER HOUSING AND BASE	.01780	FILTER	
5	PWMU-1-8005	DISENGAGE AND PIT UP FILTER HOUSING--FILTER ELEMENT INCLUDED	.00400	FILTER	
6	3293	REMOVE AND DISCARD FILTER GASKET	.00039	FILTER	
7	3293	REMOVE AND DISCARD FILTER ELEMENT	.00039	FILTER	
8	3159	DUMP REMAINING OIL FROM FILTER HOUSING	.00170	FILTER	
9	3231	WIPE FILTER HOUSING CLEAN WITH FILTER CLOTH	.00412	FILTER	
10	2896	OBTAIN BOX CONTAINING NEW FILTER ELEMENT AND GASKET	.00290	FILTER	
11	6184	OPEN BOX AND REMOVE FILTER ELEMENT AND GASKET	.00484	FILTER	
12	6196	INSERT NEW FILTER ELEMENT IN HOUSING	.00049	FILTER	
13	3738	PLACE NEW GASKET ON FILTER HOUSING	.00097	FILTER	
14	5180	WIPE UP SPILLED FUEL OIL	.00199	FILTER	
15	2581	INSPECT FILTER FOR LEAKS	.01392	FILTER	
16	3231	WIPE TOOL WITH CLOTH	.00826	FILTER	
VT-297		.07584 HRS PER FILTER			

VT-298            CLEAN, INSPECT, ADJUST ELECTRODE/NOZZLE ASSEMBLY

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3842	WALK AROUND WORK AREA	.00300	ASSEMBLY	
2	2901	OBTAIN AND ASIDE WIPING CLOTH	.00520	ASSEMBLY	
3	PMMU-1-8000	REMOVE AND INSTALL SCREW	.00560	ASSEMBLY	
4	PMMU-1-8005	REMOVE AND INSTALL ACCESS PANEL OR SWING HINGED TRANSFORMER SIDE AND BACK IN PLACE	.00400	ASSEMBLY	
5	PMMU-1-8003	BREAK AND WAKE UP NOZZLE LINE CONNECTION (FERRULE OR FLARE NUT)	.01780	ASSEMBLY	
6	PMMU-1-8006	REMOVE AND INSTALL HOLD-DOWN DEVICE FOR NOZZLE LINE (LOCK NUT, SET SCREW, LOCK LEVER, ETC.)	.01340	ASSEMBLY	
7	6190	DETACH AND ATTACH ELECTRODE LEAD (SPRINGS CLIP)	.00112	ASSEMBLY	
8	PMMU-1-8005	MANEUVER ELECTRODES/NOZZLE ASSEMBLY OUT OF AND INTO AIR TUBE	.01600	ASSEMBLY	
9	PMMU-1-8000	REMOVE AND INSTALL BURNER NOZZLE (WITH STRAINER)	.01780	ASSEMBLY	
10	6190	EXTRACT AND INSERT BURNER NOZZLE STRAINER	.00224	ASSEMBLY	
11	2580	INSPECT NOZZLE AND NOZZLE STRAINER	.00368	ASSEMBLY	
12	2134	CLEAN NOZZLE WITH WIRE BRUSH	.00239	ASSEMBLY	
13	3197	RASH NOZZLE STRAINER WITH FUEL OIL	.00414	ASSEMBLY	
14	0629	CLEAN ELECTRODE WITH SHOT CLOTH	.02552	ASSEMBLY	
15	2580	INSPECT ELECTRODES FOR PROPER GAP AND CLEARANCE	.00566	ASSEMBLY	
16	0913	ADJUST ELECTRODES ELECTRODE, AVS. 1-TIME CUT OF 2	.00280	ASSEMBLY	
17	3231	WIPE TOOLS WITH CLOTH	.00324	ASSEMBLY	
18	6180	WIPE UP SPILLED FUEL OIL	.00199	ASSEMBLY	
VT-298	*	.17254 HRS PER ASSEMBLY			

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VT-299            SERVICE FUEL UNIT--INCLUDES FUEL OIL PUMP, FORCED DRAFT BLOWER AND MOTOR

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3842	WALK AROUND WORK AREA	.00060	UNIT	
2	2901	OBTAIN AND ASIDE WIPING CLOTH	.01040	UNIT	
3	PMMU-1-8000	REMOVE AND INSTALL CAP SCREW (PUMP HEAD)	.14240	UNIT	
4	PMMU-1-8005	DISASSEMBLE AND FIT UP PUMP HEAD	.00400	UNIT	
5	3293	REMOVE PUMP HEAD GASKET	.00039	UNIT	
6	3293	REMOVE STRAINER FROM PUMP HEAD	.00039	UNIT	
7	2896	OBTAIN CARTON CONTAINING NEW STRAINER AND GASKET	.00050	UNIT	
8	6184	REMOVE STRAINER AND GASKET FROM CARTON	.00097	UNIT	
9	3197	CLEAN EXISTING STRAINER AND GASKET	.00331	UNIT	
10	6196	INSTALL STRAINER IN PUMP HOUSING	.00049	UNIT	
11	3738	PLACE GASKET ON PUMP HOUSING	.00097	UNIT	
12	3152	LUBRICATE PUMP/FORCED DRAFT BLOWER MOTOR	.00236	UNIT	
13	6180	WIPE UP SPILLED OIL	.00199	UNIT	
VT-299	*	.16876 HRS PER UNIT			

VT-300      SERVICE FURNACE FIREBOX AND FLUE

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3842	WALK AROUND WORK AREA	.03000	JOB	
2	3862	OBTAIN AND ASIDE SMALL HAND TOOL	.00684	JOB	
3	2901	OBTAIN AND ASIDE WIPING CLOTH	.00520	JOB	
4	PWNU-1-8000	REMOVE AND INSTALL SCREW (ACCESS PANEL)	.02560	JOB	
5	PWNU-1-8012	LIFT OFF ACCESS PANEL AND PLACE PANEL IN POSITION	.01780	JOB	
6	PWNU-1-8000	REMOVE AND INSTALL NUT (FIREBOX PORT COVER)	.00560	JOB	
7	PWNU-1-8011	REMOVE AND INSTALL "FLUE CLEAN-OUT COVER, 9 INCH DIA.,, FRICITION FIT	.07320	JOB	
8	3862	ATTACH AND REMOVE VACUUM CLEANER HOSE	.00694	JOB	
9	0937	CONNECT AND DISCONNECT VACUUM CLEANER ELECTRICAL CORD	.01186	JOB	
10	3240	LOOSEN ATTACHED RESIDUE IN FLUE WITH SCRAPER	.00819	JOB	
11	2939	SCOOP OUT AMASSED MATERIAL IN FLUE	.00498	JOB	
12	3912	START AND STOP VACUUM CLEANER	.01552	JOB	
13	5170	VACUUM OUT REMAINDER OF LOOSE RESIDUE IN FLUE	.01983	JOB	
14	3240	LOOSEN ATTACHED RESIDUE IN FIREBOX WITH SCRAPER	.01636	JOB	
15	2938	SCOOP OUT AMASSED MATERIAL IN FIREBOX	.01664	JOB	
16	5169	VACUUM OUT REMAINDER OF LOOSE MATERIAL IN FIREBOX	.00592	JOB	
17	3134	CLEAN PORT COVERS	.00992	JOB	
18	2404	CUT ASBESTOS ROPE TO LENGTH FOR FIREBOX PORT COVER GASKET	.00018	JOB	
19	0127	FIT FIREBOX PORT COVER GASKET	.00150	JOB	
20	3231	WIPE HAND TOOL WITH CLOTH	.01236	JOB	

VT-300 = .41183 HRS PER JOB

VT-301      SERVICE FURNACE STACK SWITCH

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3862	OBTAIN AND ASIDE SMALL HAND TOOL	.00496	SWITCH	
2	2901	OBTAIN AND ASIDE WIPING CLOTH	.00418	SWITCH	
3	PWNU-1-8000	REMOVE AND INSTALL SCREW (STACK SWITCH COVER)	.01780	SWITCH	
4	6192	REMOVE AND INSTALL STACK SWITCH COVER	.00118	SWITCH	
5	4200	CHECK MOVEMENT OF RELAY MANUALLY	.01000	SWITCH	
6	2380	INSPECT CONTACTS, WIRING, CONNECTIONS AND RELAYS FOR UNSATISFACTORY CONDITIONS	.01413	SWITCH	
7	PWNU-1-8006	LOOSEN AND TIGHTEN STACK SWITCH MOUNTING SCREW	.01340	SWITCH	
8	3294	REMOVE STACK SWITCH FROM MOUNTING	.00057	SWITCH	
9	3134	CLEAN SENSING ELEMENT WITH WIRE BRUSH	.00476	SWITCH	
10	2581	INSPECT SENSING ELEMENT FOR UNSATISFACTORY CONDITION	.00928	SWITCH	
11	3286	INSTALL SWITCH IN MOUNTING	.00119	SWITCH	
12	3231	WIPE TOOLS WITH CLOTH	.00024	SWITCH	

VT-301 = .08928 HRS PER SWITCH

VT-302            SERVICE AIR CIRCULATION FAN AND MOTOR

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3842	WALK AROUND WORK AREA	.00600	JOB	
2	3952	CSTAIN AND ASIDE SMALL HAND TOOL	.00684	JOB	
3	2901	CSTAIN AND ASIDE WIPING CLOTH	.00312	JOB	
4	PMMU-1-8383	TURN FURNACE SWITCH OFF AND ON	.04230	JOB	
5	2137	UNLATCH AND LATCH ACCESS PANEL	.00102	JOB	
6	PMMU-1-8012	REMOVE AND INSTALL ACCESS PANEL (NO FASTERERS)	.01780	JOB	
7	2581	VISUALLY INSPECT INTERIOR OF CABINET, FAN, FAN MOTOR, ETC.	.00464	JOB	
8	1127	ROTATE FAN AND MOTOR BY HAND AND CHECK CONDITION OF BELT	.01770	JOB	
9	PMMU-1-8440	INSPECT, CLEAN, LUBRICATE AND ADJUST FAN MOTOR	.04810	JOB	
10	3152	LUBRICATE FAN BEARINGS	.00236	JOB	
11	2605	CHECK CONDITION OF FAN BEARING	.01906	JOB	
12	3226	WIRE DOWN CABINET INTERIOR WITH CLOTH	.04064	JOB	
VT-302 *		.20958 HRS PER JOB			

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VT-303            CONDUCT FURNACE OPERATIONAL CHECK

NO	REFERENCE	WORK UNIT DESCRIPTION	HOURS	UNITS	V38
1	3842	WALK AROUND WORK AREA	.00450	CHECK	
2	3862	CSTAIN AND ASIDE SMALL HAND TOOL	.00456	CHECK	
3	2090	OPEN AND CLOSE FUEL OIL SHUT OFF VALVE	.00630	CHECK	
4	PMMU-1-8383	TURN FURNACE SWITCH/CIRCUIT BREAKER OFF AND ON	.02820	CHECK	
5	PMMU-1-8006	LOOSEN AND TIGHTEN STACK SWITCH SET SCREW	.01340	CHECK	
6	3294	REMOVE STACK SWITCH FROM MOUNTING	.00057	CHECK	
7	3286	INSTALL STACK SWITCH IN MOUNTING	.00119	CHECK	
8	2601	OBSERVE FLAME FOR PROPER BURN	.00840	CHECK	
9	5604	ADJUST FLAME	.01775	CHECK	
10	3955	ENSURE STACK SWITCH CYCLES FURNACE WITHIN PROPER TIME FRAME	.02500	CHECK	
11	2392	RESET STACK SWITCH (PUSH BUTTON)	.00034	CHECK	
VT-303 *		.11021 HRS PER CHECK			

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Installation: \_\_\_\_\_ Service: \_\_\_\_\_  
Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

## EPS Feedback sheet.

The following questions are designed to assist the NAVFAC Industrial Engineering Center in its continuing effort to improve the overall quality of standard data presented in the EPS handbooks.

## 1. List frequently recurring tasks which are not presently covered:

CRAFT HANDBOOK	TASK DESCRIPTION
_____	_____
_____	_____
_____	_____

## 2. List tasks presently covered which are never used:

CRAFT HANDBOOK	TASK DESCRIPTION
_____	_____
_____	_____
_____	_____

## 3. List tasks for which, in your judgment, craft time is inaccurate - indicate whether too high or too low:

CRAFT HANDBOOK	TASK DESCRIPTION	HIGH/LOW
_____	_____	_____
_____	_____	_____
_____	_____	_____

## 4. Identify apparent inconsistencies in present data coverage:

\_\_\_\_\_

\_\_\_\_\_

## 5. General comments (format of data presentation, etc.)

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Installation: \_\_\_\_\_ Service: \_\_\_\_\_  
Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

EPS Feedback sheet.

The following questions are designed to assist the NAVFAC Industrial Engineering Center in its continuing effort to improve the overall quality of standard data presented in the EPS handbooks.

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_____	_____
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_____	_____
_____	_____

3. List tasks for which, in your judgment, craft time is inaccurate - indicate whether too high or too low:

CRAFT HANDBOOK	TASK DESCRIPTION	HIGH/LOW
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5. General comments (format of data presentation, etc.)

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Installation: \_\_\_\_\_ Service: \_\_\_\_\_  
Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

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CRAFT HANDBOOK	TASK DESCRIPTION	HIGH/LOW
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4. Identify apparent inconsistencies in present data coverage:

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5. General comments (format of data presentation, etc.)

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